Government of Karnataka

Directorate of Textbooks

SCIENCE

3

EDITED VERSION

THIRD STANDARD

THE BANGALORE PRESS

No. 88, Mysore Road, Bangalore - 560 018

07684

ರಾಷ್ಟ್ರಗೀತೆ

ಜನಗಣ ಮನ ಅಧಿನಾಯಕ ಜಯ ಹೇ |
ಭಾರತ ಭಾಗ್ಯ ವಿಧಾತಾ |||
ಪಂಜಾಬ ಸಿಂಧು ಗುಜರಾತ ಮರಾಠಾ |
ದ್ರಾವಿಡ ಉತ್ಕಲ ವಂಗಾ ||
ವಿಂಧ್ಯ ಹಿಮಾಚಲ ಯಮುನಾ ಗಂಗಾ |
ಉಚ್ಛಲ ಜಲದಿ ತರಂಗಾ ||
ತವ ಶುಭ ನಾಮೇ ಜಾಗೇ |
ತವ ಶುಭ ಆಶಿಷ ಮಾಗೇ ||
ಗಾಹೇ ತವ ಜಯಗಾಥಾ |
ಜನಗಣ ಮಂಗಳದಾಯಕ ಜಯ ಹೇ ||
ಭಾರತ ಭಾಗ್ಯ ವಿಧಾತಾ |
ಜಯ ಹೇ ಜಯ ಹೇ ಜಯ ಹೇ ||
ಜಯ ಜಯ ಜಯ ಜಯ ಹೇ ||

—ರವೀಂದ್ರನಾಥ ಠಾಗೂರ್

ನಾಡಗೀತೆ
ಜಯ ಹೇ ಕರ್ನಾಟಕ ಮಾತೆ

ಜಯ್ ಭಾರತ ಜನನಿಯ ತನುಜಾತೆ
ಜಯ ಹೇ ಕರ್ನಾಟಕ ಮಾತೆ |

ಜಯ್ ಸುಂದರ ನದಿ ವನಗಳ ನಾಡೆ,
ಜಯ ಹೇ ರಸಋಷಿಗಳ ಬೀಡೆ |
ಭೂದೇವಿಯ ಮಕುಟದ ನವಮಣಿಯೆ,
ಗಂಧದ ಚಂದದ ಹೊನ್ನಿನ ಗಣಿಯೆ,
ರಾಘವ ಮಧುಸೂದನರವತರಿಸಿದ
ಭಾರತ ಜನನಿಯ ತನುಜಾತೆ,
ಜಯ ಹೇ ಕರ್ನಾಟಕ ಮಾತೆ |

ಭಾರತ ಜನನಿಯ ತನುಜಾತೆ
ಜಯ ಹೇ ಕರ್ನಾಟಕ ಮಾತೆ |

ತೈಲಪ ಹೊಯ್ಸಳರಾಳಿದ ನಾಡೆ,
ಡಂಕಣ ಜಕಣರ ನೆಚ್ಚಿನ ಬೀಡೆ,

ಕೃಷ್ಣ ಶರಾವತಿ ತುಂಗಾ
ಕಾವೇರಿಯ ವರರಂಗ

ಚೈತನ್ಯ ಪರಮಹಂಸ ವಿವೇಕರ
ಭಾರತ ಜನನಿಯ ತನುಜಾತೆ,
ಜಯ ಹೇ ಕರ್ನಾಟಕ ಮಾತೆ |

ಜ ತೋಟಿ,
ನೋಟಿ,
ಲ್ಯಾನ
ನ
ಗಳ ಧಾಮ
ಮ
ಗೇಹ |
ದೇಹ |
ತನುಜಾತೆ,
ಮಾತೆ |

ಗಳ ನಾಡೆ,
ಬೀಡೆ |

—ಕುವೆಂಪು

Community Health Cell
Library and Information Centre
367, " Srinivasa Nilaya "
Jakkasandra 1st Main,
1st Block, Koramangala,
BANGALORE - 560 034.
Phone : 5531518 / 5525372
e-mail:sochara@vsnl.com

Government of Karnataka
Directorate of Text Books

SCIENCE

EDITED VERSION

THIRD STANDARD

3

Published by : **THE BANGALORE PRESS**
No. 88, Mysore Road
BANGALORE – 560 018

1.	Title of the Book	: Science Book for III Std.
2.	Copyright Holder	: Director of Text Books, DSERT, B.P. Wadia Road Bangalore – 560 004
3.	First Print	: 1992
4.	Reprint	: 2000
5.	Text Book Committee	
	(1) Sri H.N. Venkataramaiah	: Chairman
	(2) Sri Narasimha Murthi	: Member
	(3) Smt. Malini Sampath	: ,,
	(4) Sri Dhruvaraj H. Joshi	: ,,
	(5) Sri G.S. Somashekar	: ,,
6.	Scrutinisers	: (1) Smt. T.V. Lalithamma (2) Sri G.S. Sheshamurthy (3) Dr. S. Balachandra Rao
7.	Artist	: Sri Ningappa K. Hodepad
8.	Publishers	: THE BANGALORE PRESS No. 88, Mysore Road, B'lore-18
9.	Co-ordinators	: A.S. Beig B.S. Nagesha Rao
10.	Printing Paper used	: 60 GSM, Creamwove
11.	Number of copies printed	: 60,000
12.	Price of Book	: Rs. 4.40
13.	D.T.P. by	: THE BANGALORE PRESS Bangalore-18
14.	Printed at	: THE BANGALORE PRESS Bangalore-18

FOREWORD

This text book is prepared as per the syllabus framed based on National Policy on Education 1986. The Core Elements and Human values that are stressed in the National Policy on education are addressed at length in developing lessons.

The Directorate is grateful to all those who have participated in the production of this book.

The Text Books are reprinted after editing and making necessary corrections. The Directorate welcomes suggestions for further improvement of the book.

M. JALAJA BAI
Director
Directorate of Text Books B'lore–4

Bangalore
Date : 22-2-2000

E 12-0
07684
HEALTH CEL

FOR TEACHERS

Human needs are changing everyday in our modern society and so is the mode of life. Science and technology have played a major role in this endeavour. Therefore science is and should be an integral part of General Education. The new text book is designed keeping in view the changing needs of the students and society and is therefore different from the old one. Increased facilities have enabled the students to keenly observe the properties of things in their immediate environment with interest. The benefits derived through science and technology, have roused the curiosity of the child. Students should be made to have meaningful, joyful, learning experience of finding out the truth by themselves. This is possible only if the teacher adopts a new, suitable methodology to stimulate students in the classroom . In this text book you can see that a concept and sub concept are dealt with through an activity suited to develop the desired competence in the child. The attention of a student is drawn towards the day to day experiences, situations which he/she has undergone. Students are asked to observe, experience, collect data, and hypothesise, so that they can arrive at a conclusion and learn science independently. It is this change that is desired and expected. In addition to this, suitable suggestions are given to teachers to develop a scientific attitude and scientific values in children.

This book contains five chapters. Suitable simple activities are given to develop a correct concept. These activities can be done by the students themselves. Students may be asked to work in groups and later the teachers can discuss with them, their findings. It is hoped that the allotment of about 170 periods is enough for covering the contents of the book effectively through activities, discussions, excursions and unit tests. Allotment of time is also hinted at for proper activities. Precautionary measures to be adopted by teachers are also suggested.

At the outset teachers have to be clear about the objectives and the ways and means of achieving them. Teachers should instruct students to get the easily and locally available materials necessary to conduct a particular activity in advance. Measures to be adopted to procure things should also be conveyed to the students in advance. It is a known fact that the primary schools in particular do not have facilities of a laboratory. It must not be forgotten that nature is the best laboratory. Teachers must be resourceful enough to utilise nature, and natural resources effectively. This includes human resources as well. We may utilise the services of locally available resources in the village like a smith, carpenter, agriculturist etc, along with locally available persons like doctors, village development officers, gramsevaks, nurses and others.

Concepts to be essentially learnt are given at the end of the each lesson in a caption. These are the points the students should learn.

You have a set of questions which the students should answer. This in itself is not exhaustive. They are only suggestive. This should be followed by other follow up activities. Organising discussions with experts, excursions and their importance need not be specially stressed again and again at this juncture.

Just as the presentation of the text has changed, the method of dealing with it should also change. It must be noted that the method of teaching science should be different from the method of teaching a language. Students should be the centre of the activity and the teacher must create such an atmosphere for effective teaching and learning of science. In the absence of such an atmosphere, teaching of science will be docile, monotonous and all our efforts will be futile. It is expected that the science teachers will change their attitude and adapt themselves to the changed environment and circumstances in the interest of the child, the subject and the society.

CONTENT

CHAPTER 1

Living and non-living things

1. Natural and man-made things 1
2. Living and non-living things 3
3. Parts of a plant 8
4. Parts of an animal body 13
5. Animals and their food 18
6. Movement in animals 22

CHAPTER 2

Our body, food and health

1. Human body is a machine 26
2. Our sense organs 30
3. Our teeth 36
4. Our food 41

CHAPTER 3

1. Three states of matter 51
2. Water dissolves many substances 56
3. Separation of mixtures 59

CHAPTER 4

Weather and Seasons

1. Different types of weather 61
2. Water cycle 66

CHAPTER 5

1. The Sky 69

Protect your child from diseases.
Make sure that full immunization is completed by the first birthday

Recommended Schedule

Age	Vaccine	No. of doses	Disease
3 - 9 months	DPT	3 at intervals of 4-6 weeks	Diptheria Whooping Cough Tetanus
3 - 9 months	Polio	3 at intervals of 4-6 weeks	Poliomyelitis
3 - 9 months	BCG	1	Tuberculosis
9 - 12 months	Measles	1	Measles
Pregnant mothers 16-36 weeks	TT	1 (Booster)	Tetanus (Protects both mother and child)

(Give two doses if not vaccinated previously)
Based on Government of India recommendations.

Issued in public interest by UNICEF.
Regional Office for South Central Asia, New Delhi.

1. **Donate blood: save life.**
   It is harmless.
2. **Donate eyes gifts sight.**
   It is divine.
3. **Leprosy is curable, Take treatment.**

* * *

ಆಕಾಶವಾಣಿ ಕಾರ್ಯಕ್ರಮ

ಶಾಲಾ ಮಕ್ಕಳಿಗೆ ಪಠ್ಯ ಆಧಾರಿತ ಆಕಾಶವಾಣಿ ಕಾರ್ಯಕ್ರಮ
ಪ್ರಸಾರದ ವೇಳೆ: ಪ್ರತಿ ಸೋಮವಾರದಿಂದ ಗುರುವಾರದವರೆಗೆ
(ಅಪರಾಹ್ನ 2.30 - 3.00) (ವಾರದಲ್ಲಿ 4 ದಿನಗಳು)

CHAPTER 1

LIVING THINGS

1. NATURAL AND MAN-MADE THINGS

There are a number of things around us like plants, animals, rocks, mountains, rivers and so on. Look at the figure and list out all the things you see.

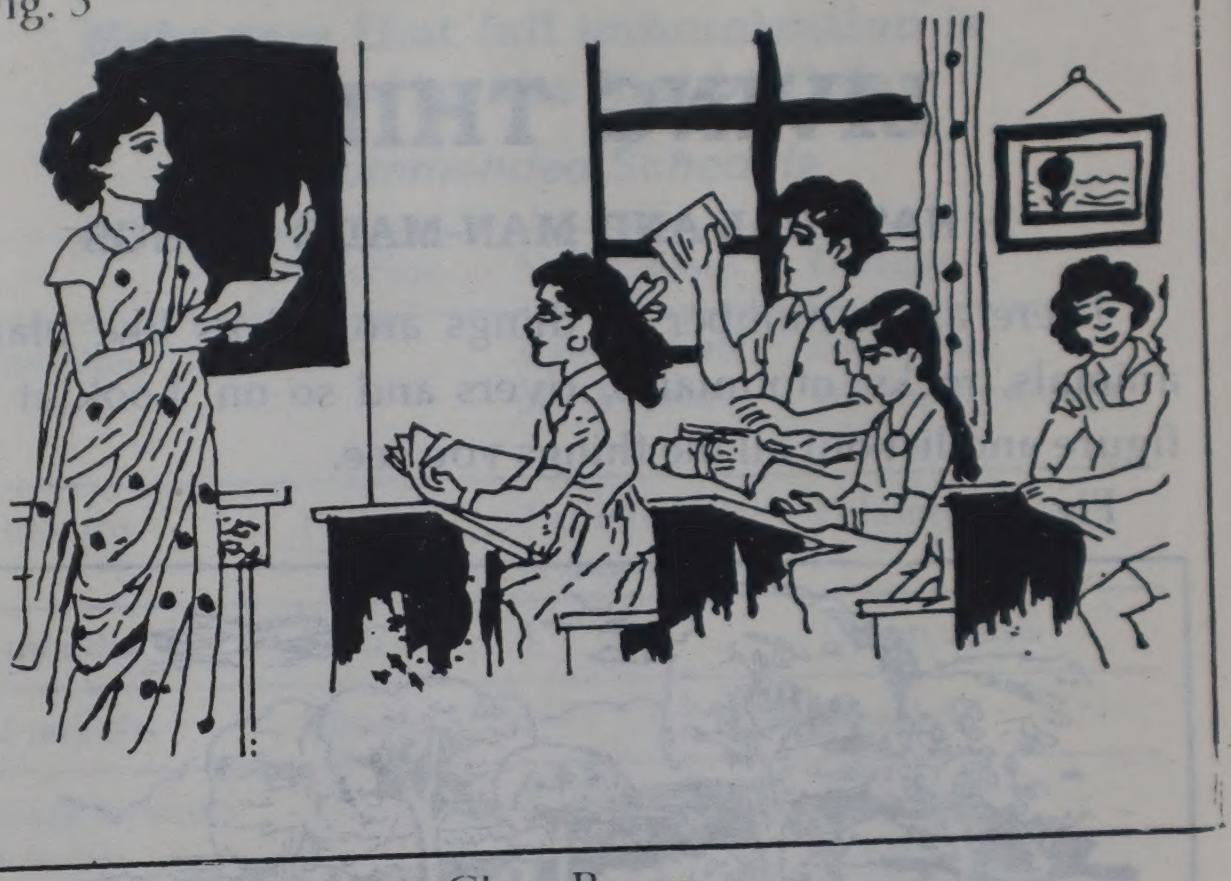
Fig. 1

You see a number of things even in your school and house. Write down their names in your note book

Fig. 2

House environment

Fig. 3



Class Room

Thus we see a lot of things around us. Of these things, some are made by man. Can you list them out?

Animals, plants, rocks, mountains, soil and others are formed on their own in Nature. In other words, they are formed without the help of man. They are called natural things.

Tables, benches, houses, carts, radios, etc. are made by man. They are called man-made things.

Activity

Classify the things you see around you into natural things and man-made things.

2. LIVING AND NON-LIVING THINGS

You have already learnt natural and man-made things.

All man-made things are non-living things. Non-living things do not have life. Among natural things, some are living and some are non-living things.

Fig. 4

Look at the figure. Classify them into living and non-living things, and write their names in the table below.

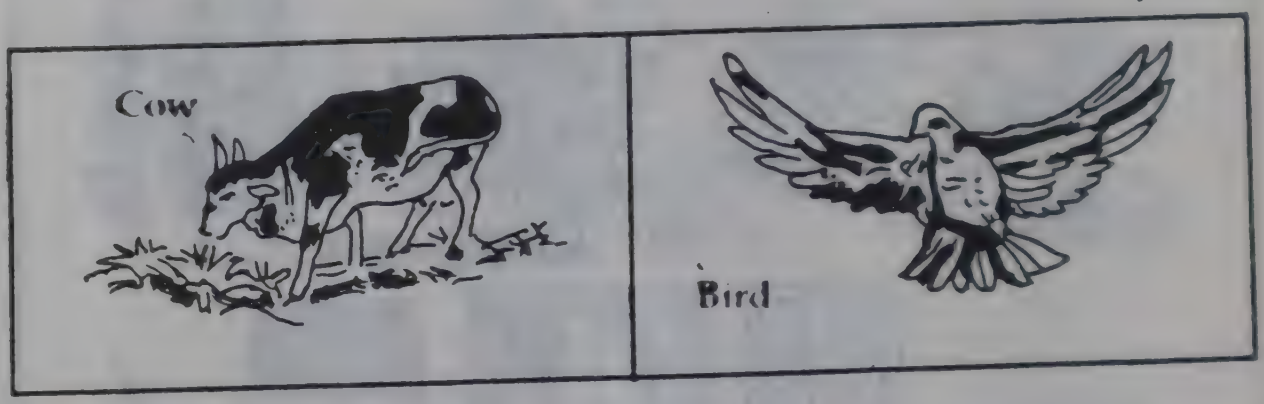
Sl. No.	Living things	Sl. No.	Non-living things

Those things which have life are called living things and those things which do not have life are called non-living things.

Living things have certain specific characteristics. What are they? Let us know them.

Locomotion

Fig. 5

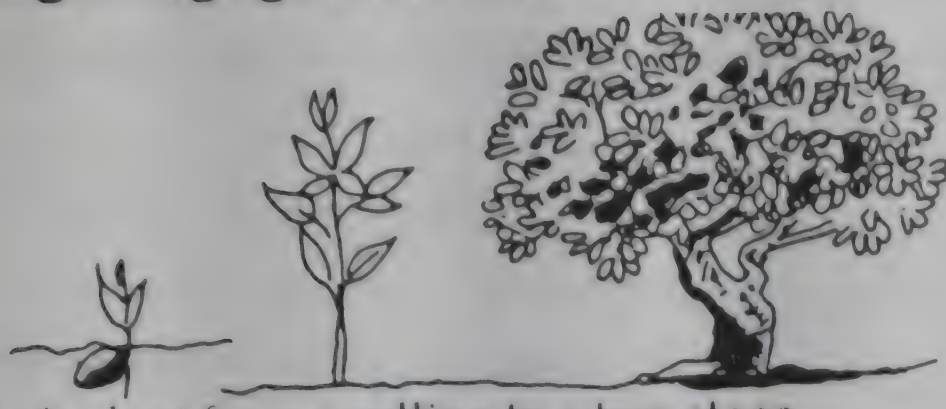


Look at the figure. Birds and Cows can move from one place to another on their own. These are natural things. You have seen a few man-made things also moving; like a train, a cycle and an aeroplane. But these are not living things. These things need external force for their movement or locomotion. They cannot move on their own.

Growth

Look at the pictures in the figure. The child grows into a woman. Pups and kittens also grow into dogs and cats respectively. Likewise the seed germinates and grows into a big plant. All plants and animals grow. Growth is another important characteristic of living things.

Living beings grow in size



1. A plant from seedling to a tree stage

2. An animal's young growing to adult

3. Human infant - Child - Youth - Adult

Living beings take in food

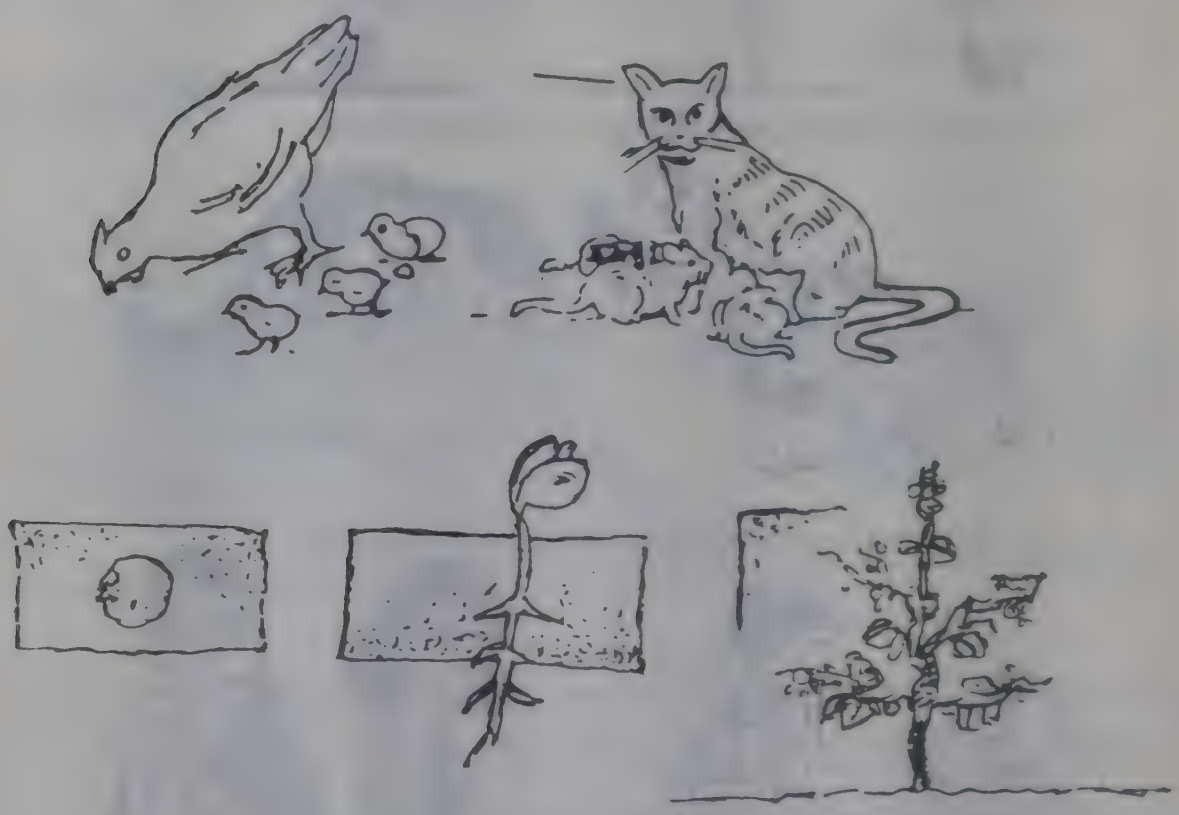
Living things need food for their growth. Plants can prepare their own food with the help of their green leaves. Animals depend upon plants and other animals for their food.

Reproduction

Plants and animals reproduce young ones of their own kind.

Look at this figure. The kitten resembles its mother in all respects except in size. The kitten is small and the cat is big.

Fig. 7



A hen lays eggs. Eggs hatch after incubation and chicks come out. These chickens resemble their mother in all respects except in size. Snakes, lizards, birds etc., also lay eggs.

When you sow a seed in soil, it germinates, and grows into a plant.

Thus you see plants and animals reproduce young ones of their own kind. This is called reproduction.

Activity

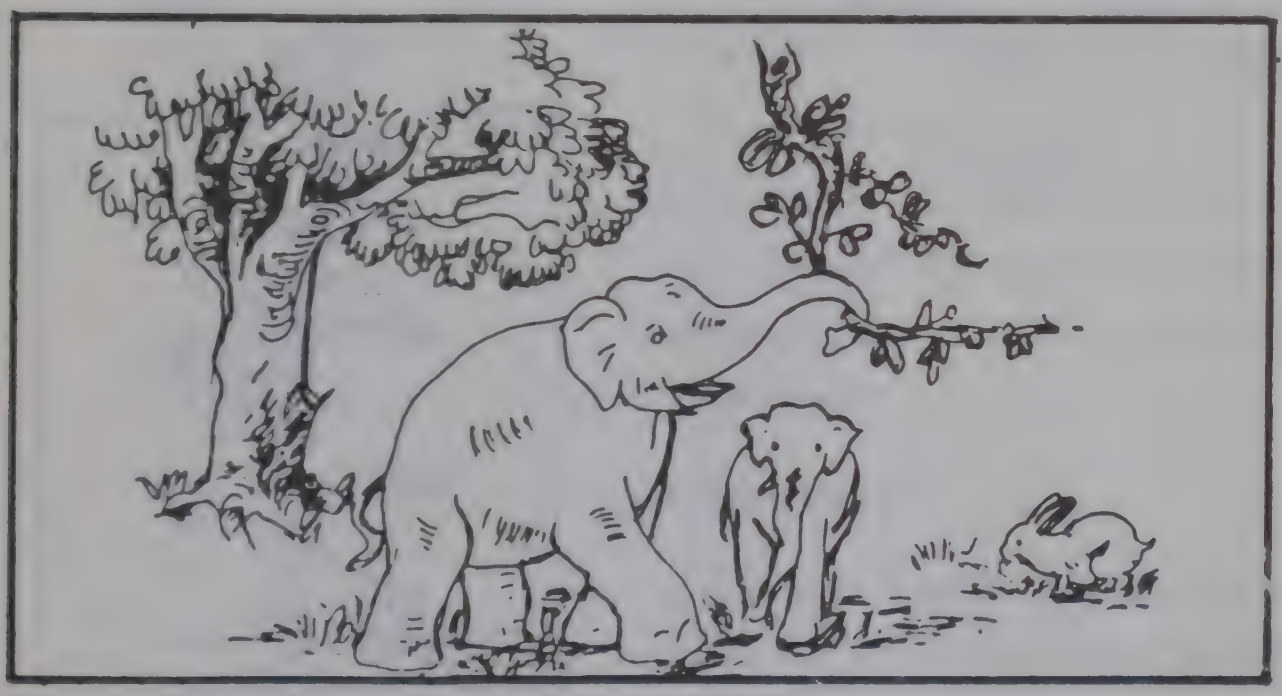
You have seen a number of egg laying animals and animals which give birth to young ones directly. Make a list of the two types of animals.

Locomotion, feeding, growth, reproduction are the important characteristics of living things.

Differences between plants and animals

Plants and animals are living things. Both of them have characteristics of living things. But they differ in certain aspects.

Fig. 8



Animals move from place to place in search of food, but plants prepare their own food. They can get food from where they

are; so they need not move. Animals depend on plants directly or indirectly for their food.

Plants and animals differ in their body structure. The leaves of all plants (except a few) are green in colour. These play an important part in the preparation of food.

3. PARTS OF A PLANT

Activity 1

You have seen a number of plants in your school garden. Carefully, pull out a plant along with its roots. Wash the soil particles found on the roots. Then list out all the parts you see.

Sl. No.	Parts

Fig. 9

Observe the figure. This is a typical plant. Name all the parts of this plant. Compare the parts of this plant with the parts of the plant you had brought to the classroom.

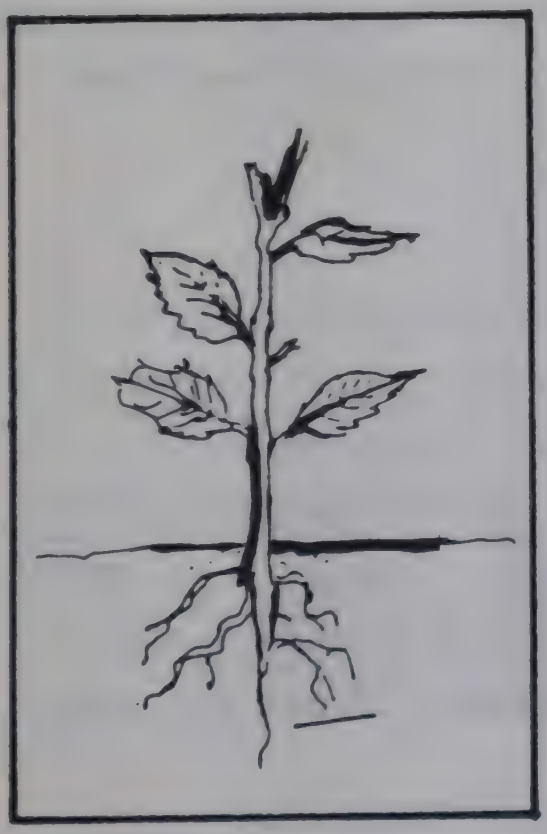
The part of the plant that grows above the soil is the **stem**.

The part of the plant that grows below the soil is the **root**.

Branches arise from the stem. The leaves develop on these branches. Here and there on the stem and branches you will find flowers and fruits.

Main parts of the plant are:

Fig. 10



1. Roots, 2. Stem, 3. Branches, 4. Leaves, 5. Flowers, 6. Fruits.

Look at the figure. It is an incomplete picture. Complete the picture by drawing the missing parts. Suitably colour all the parts.

Activity 2

Collect some plants that grow in the field or near your house. List the names of those plants. Touch and feel the nature of their stems. Likewise, touch the trunk of

a mango tree, tamarind tree and feel the nature of them. Record your experience in the table given below, by writing (✓) mark against the name of the plant.

Name of the plant	Hard stem	Soft stem

The stems of certain plants are soft to touch. The stems of certain other plants are hard to touch.

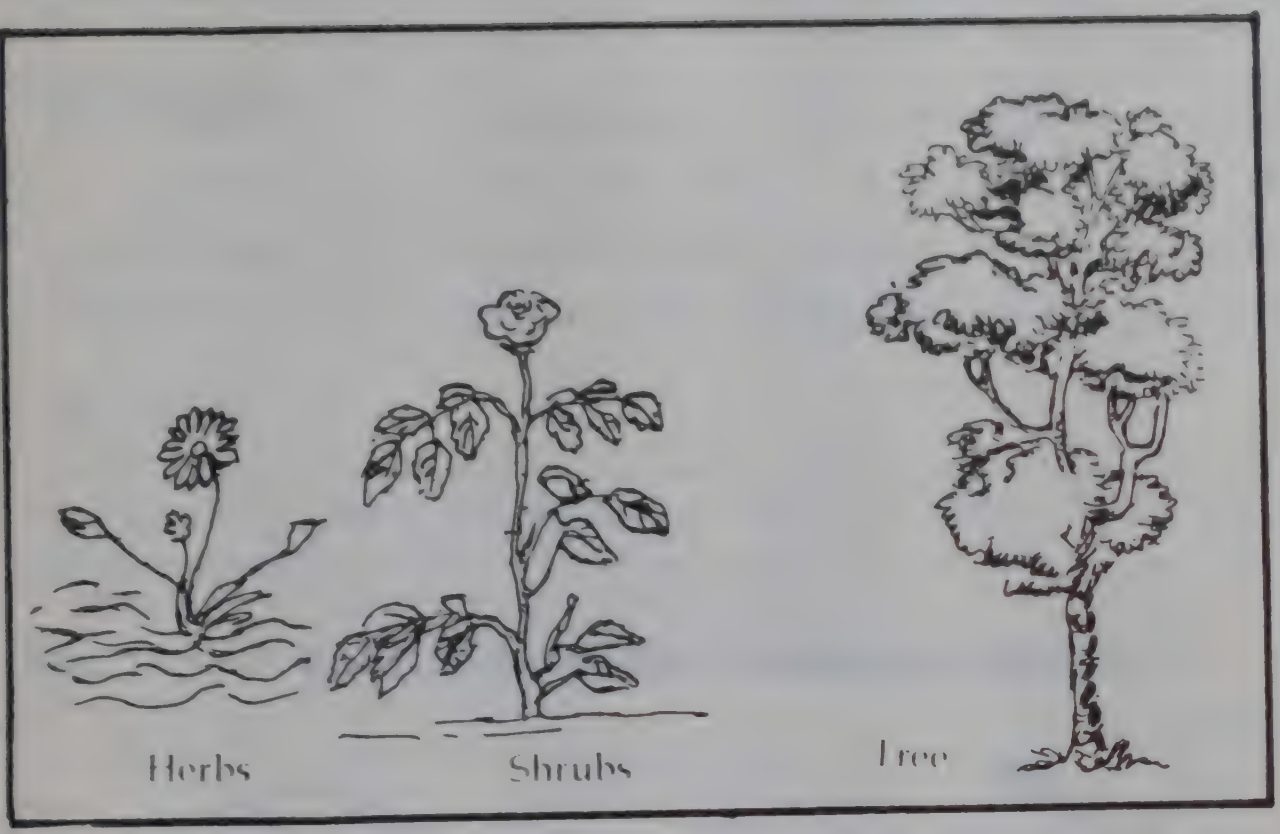
Activity 3

Collect flowers from your garden. Record their colour in the table given here.

Sl. No.	Name of the plant	Colour of the flower

Look at the figure. You can see the pictures of the leucas, pomegranate and mango. Leucas is a small plant. It grows to about 2 to 3 feet in height. Common beans and tulsi belong to this group. These are called **herbs**.

Fig. 11



Pomegranate is a medium sized plant. It grows to about 12-13 feet in height. Hibiscus, guava etc. belong to this group. These are called **'shrubs'**.

Mango is a big plant. It grows to a great height. It lives for a number of years. Neem, peepal, coconut and such other plants belong to this group. These are called **trees**.

Plants differ in their height, size and life span.

Activity 4

Make a list of plants in your surroundings. Classify them into herbs, shrubs and trees.

Herbs	Shrubs	Trees

Thus you see plants differing in their height and size.

Fig. 12

Observe the pictures above. Are all the plants alike ? If not, what differences do you notice? Peepal, banyan,

mango, neem and so on have branches. Whereas coconut, banana, palm do not have branches.

List out the plants with branches and without branches.

Leaves of all plants are not green in colour. Certain plants may have yellow or red coloured leaves. Look for such leaves. Similarly the shapes of leaves are also different.

Activity

Collect leaves of different shapes, paste them on a drawing sheet.

4. PARTS OF AN ANIMAL BODY

Fig. 13

Look at the picture (Fig 13). These animals have four limbs, a head, a neck and tail.

You must have seen many animals with four limbs, a head, a neck and a tail.

Activity

Make a list of such animals in the table given below.

Sl. No.	Name of animal

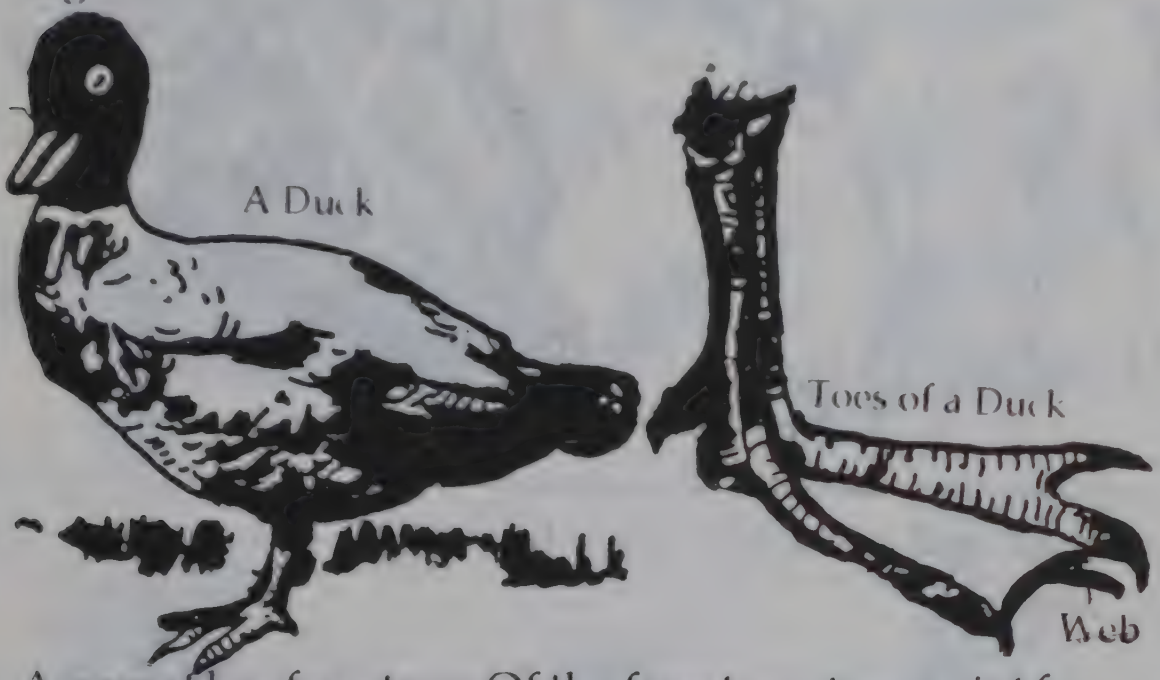
Birds

Fig. 14

Sparrow, pigeon, peacock, crow etc., are the birds you see in the figure. They have two limbs, two wings, a beak and a neck.

There are feathers on their body. The colours and shapes of the feathers are different in different kinds of birds. Birds do not have forelimbs. Instead they have two wings. Birds fly with the help of wings. Ducks and swans have a web in between the toes.

Fig. 15



A parrot has four toes. Of the four toes, two point forward and two backwards. They help in holding the branch. It has two legs, two wings and a neck. It has a curved beak. Observe the claws of the birds.

Similarities and differences among animals

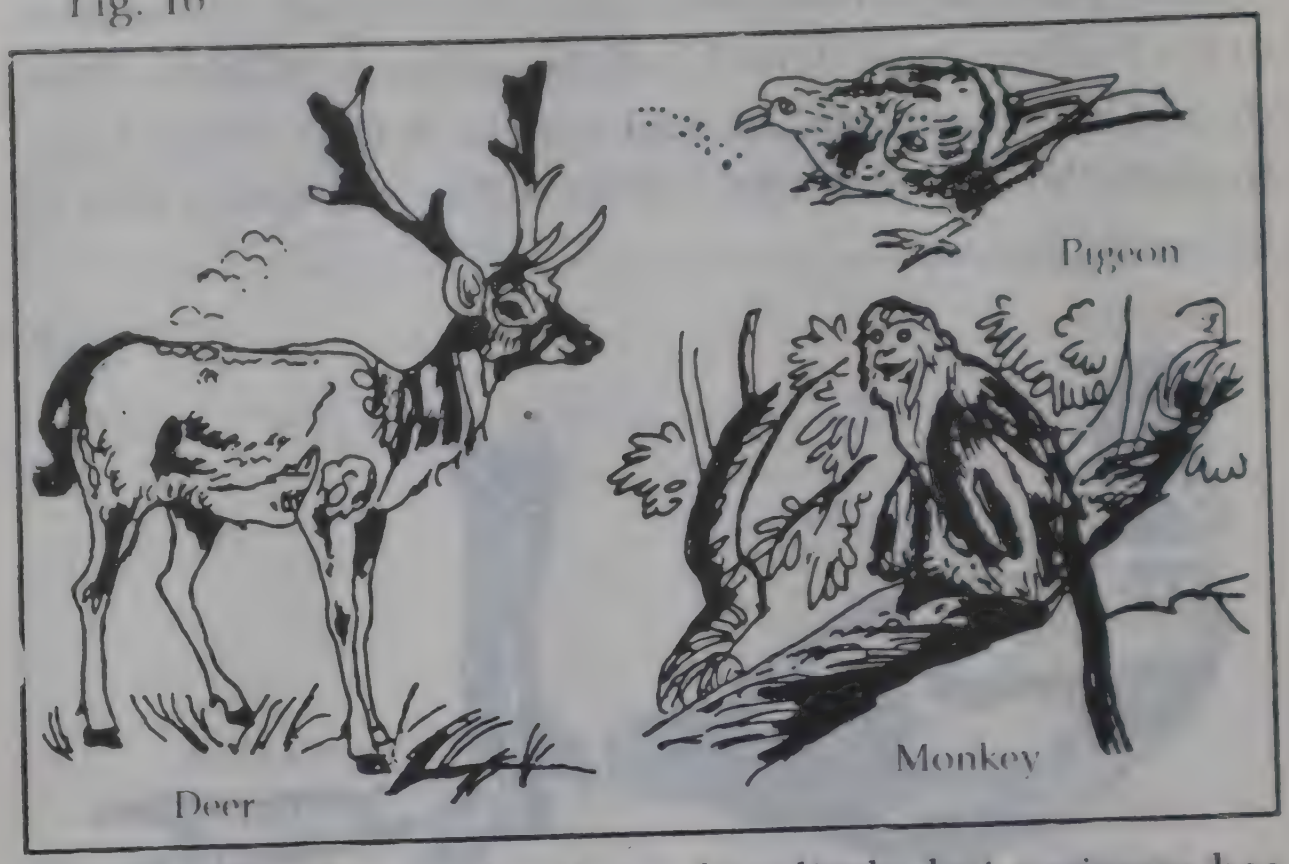
Here is the picture of a deer, a monkey and a pigeon. Do you see anything in common among these three animals?

All the three animals have a head, a neck and limbs.

But do you see the differences also?

A pigeon has a beak. Monkeys and deer do not have beaks.

Fig. 16



A deer and a monkey have four limbs but a pigeon has only two.

A pigeon has two wings and feathers, but a monkey and a deer do not have wings and feathers.

Like this, all animals around us have some features in common. There are also differences among them.

Insects also belong to the animal kingdom.

There are many varieties of insects. Some insects have six legs and two wings. Some do not have wings. Have you seen insects with wings and insects without wings?

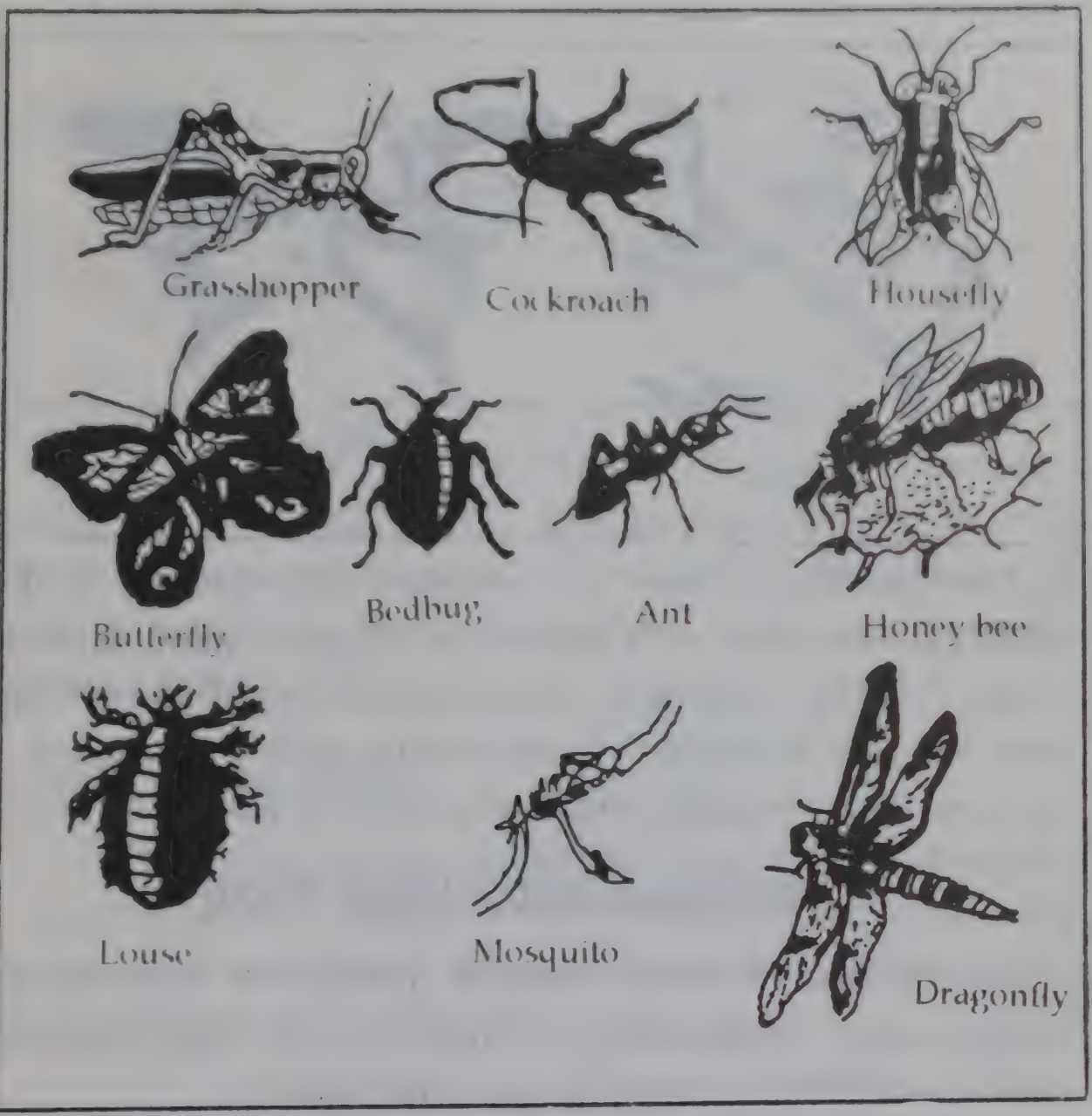
Look at the figure. This is the picture of a cockroach. This has six legs and two wings.

Fig. 17

Cockroach

This can fly with the help of its wings.

Fig. 18



The mosquito, housefly, honeybee, grasshopper etc. are some of the insects which have wings and six legs like the cockroach.

Ants, bed bugs, lice etc. also have six legs but they do not have wings. They are wingless insects.

Similarities and differences between birds and insects

Fig. 19

Here are the pictures of a sparrow and butterfly in the figure above. Both of them have wings. Examine their wings. Are the wings alike in size and structure in both the sparrow and butterfly? Examine the various parts of a sparrow and a butterfly and write them down.

5. ANIMALS AND THEIR FOOD

We see many kinds of animals around us. They are all living things. All animals need food to live. Do all animals eat the same kind of food? Look at the figure.

Fig. 20

A goat eats leaves. An elephant eats sugarcane and leaves. Like these, there are other animals that eat grass and leaves.

Activity

Make a list of animals that eat grass and leaves.

We rear cows and horses in our house. We feed them with grass and leaves. We also give them other food like bran and cakes of oil seeds. Horses are fed with horse gram. Elephants eat bamboo and fruits too. Rabbits eat vegetables, greens and grass.

Grain eating birds

Throw some grains of rice or maize in the open yard. Sparrows come flying down and begin to peck and eat the grains. Pigeons and domestic fowl also eat the grains. Grains form the chief food of many birds.

Activity 1

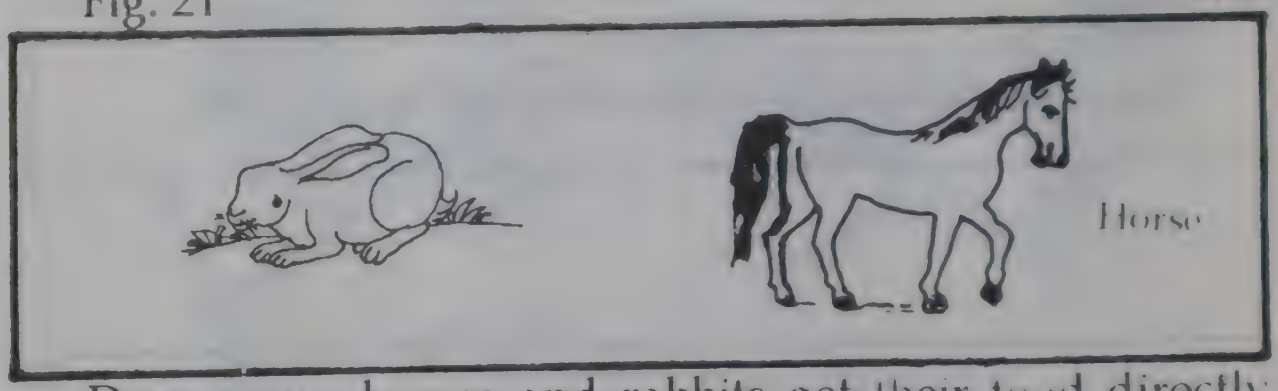
Visit a poultry farm. Observe the feeding habits of chicken.

The cow, the goat and the elephant eat grass, leaves, sugarcane and fruits. All these come from plants. Animals which eat the food coming from plants are called **herbivores**.

Activity 2

Name two important foods of each of the animals you see in the figure.

Fig. 21



Deer, cows, horses and rabbits get their food directly from plants. Do all animals eat only plant food? What do tigers, lions and panthers eat? Look at this figure.

Fig. 22

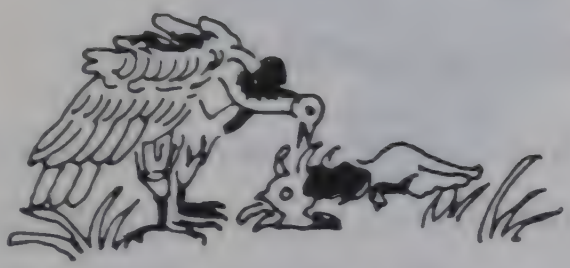
Different Animals eating their foods

The cat eats rats. Snakes eat frogs and mice. You might have heard that lions kill deer. Many animals hunt other animals and eat them.

Many birds eat animals. Look at the animals in the figure below.

Fig. 23

Owl eating a rat

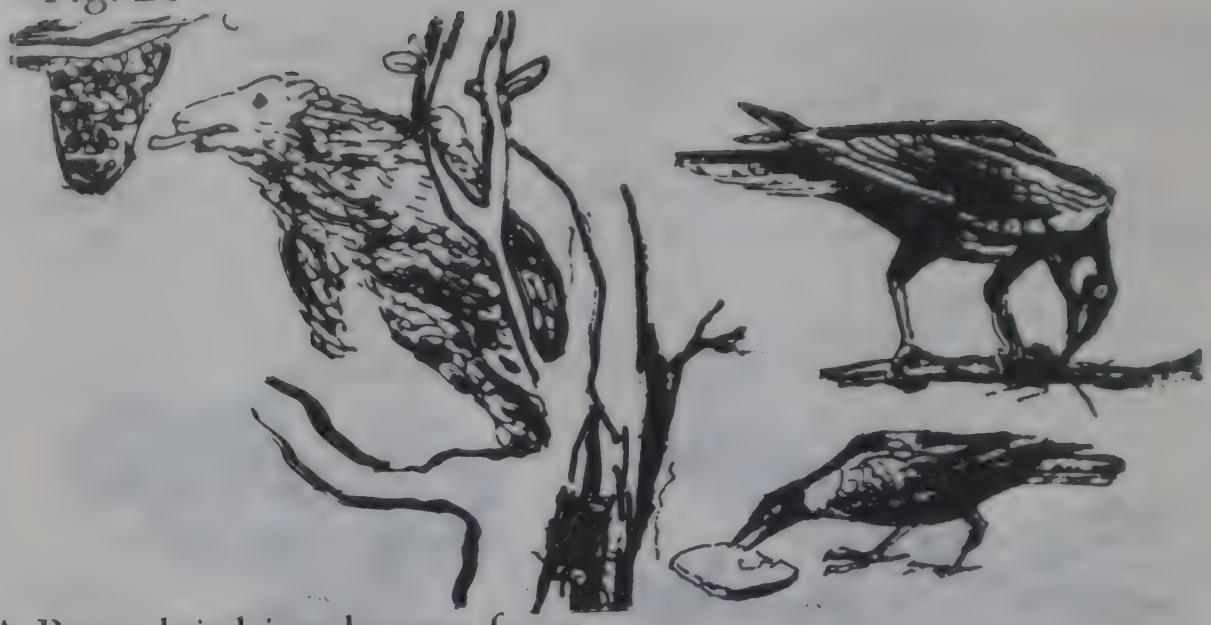


Vulture eating dead animal

The eagle has caught a rat. The owl is also eating a rat. The crane has caught a fish and the vulture is eating the flesh of a dead animal. These are all flesh eating birds. All animals that eat the flesh of other animals are called **carnivores.**

Some animals eat both flesh of other animals and plant foods. Such animals are called **omnivores**.

Fig. 24



A Bear drinking honey from the bee-hive on a tree,

A Crow eating bread

Bears and crows are omnivores.

6. MOVEMENT IN ANIMALS

Animals move from place to place. You have seen a dog walking, a rat running, a sparrow flying and an ant moving about. You know that there is a difference in shapes and sizes among animals. Similarly there is a difference in their mode of movement.

Look at the picture.

Fig. 25

You see some animals moving. Some animals use their four legs for movement. Example: cow, dog, cat.

Activity

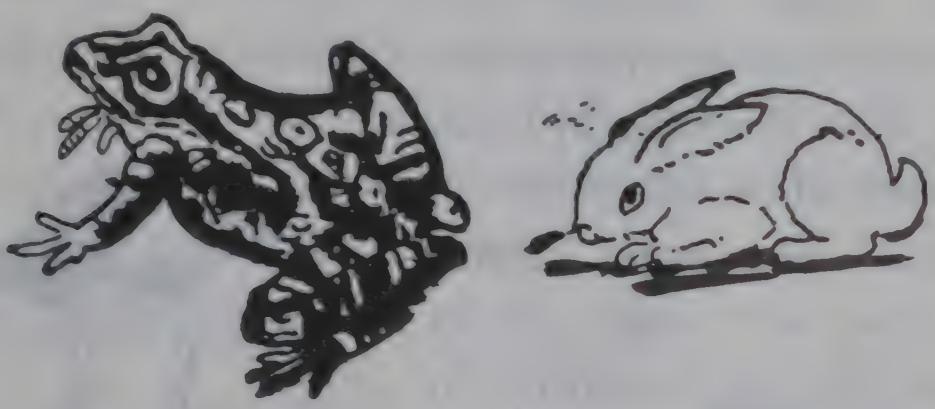
Name five other animals which move with four legs.

1. _____ 2. _____ 3. _____

4. _____ 5. _____

Look at the picture.

Fig. 26



Frog Rabbit

A frog hops and a rabbit jumps. Notice the difference in the size of their forelimbs and hind limbs. The hind limbs are longer and stronger. That is why they can jump long distances.

The kangaroo is the national animal of Australia. Its hind limbs are longer and stronger than the forelimbs. Its tail is also big and heavy. Kangaroos jump long distances. Look at this picture.

Fig. 27

Kangaroo

Here are some birds. They have legs with which they walk, run and hop. Which is the other mode of movement in birds?

Fig. 28

Look at this picture.

Birds can fly. A pair of wings help them in flying.

Pigeon

Birds that do not fly

Fig. 29

Some birds cannot fly. Ostrich, an African bird is one of them. It is the biggest bird. It can run at a speed of 55 kilometers per hour. Emu, Rhea, Kiwi are other birds which do not fly. Penguins do have wings, but they cannot fly. Their wings help them in swimming.

Ostrich

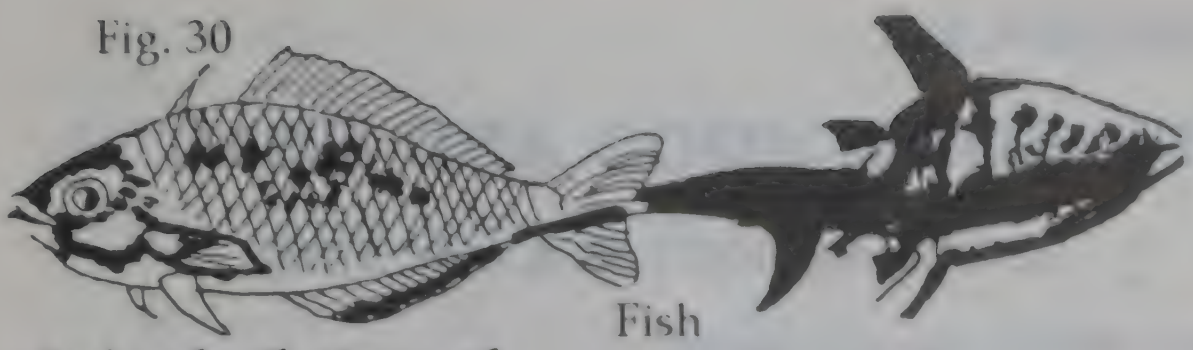
Penguin

Many birds fly from one country to another every year. You will learn about it in higher classes.

Movement in fishes

Fishes live in water. The body is boat shaped. This helps the fish to move easily in water. Fishes have fins which help them to swim. They also help the fish to move forward and sidewards and in balancing.

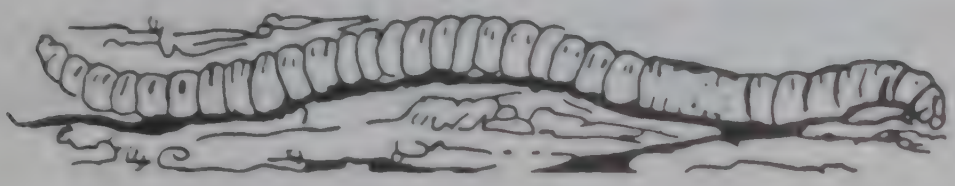
Fig. 30



Fish

Animals that crawl

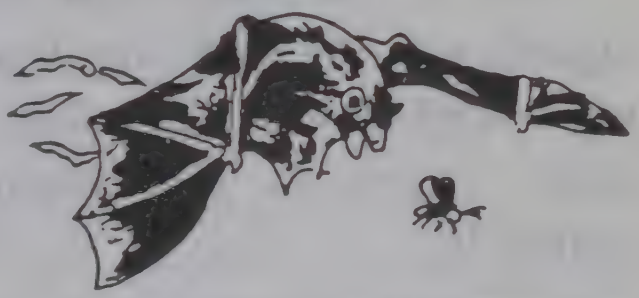
Fig. 31



Snakes do not have legs. But they crawl very fast on land. The muscles of the snake's body and it's ribs help in crawling. The muscles of the earthworm and tiny bristle like things on its skin help it to crawl.

THINGS TO KNOW

Fig. 32



A bat is not a bird. But it flies. A bat has leathery wings which help in flying.

A draco is a lizard which glides from tree to tree. It has skin which stretches between its limbs. This skin helps in flying.

FOR YOU TO REMEMBER

1. Animals walk, run and hop using their legs.
2. Birds have wings to fly.
3. Fishes swim using their fins.
4. Some animals crawl on land.

CHAPTER 2

OUR BODY, FOOD AND HEALTH

1. HUMAN BODY IS A MACHINE

Parts of the human body

Our body is a wonderful machine. We pick up a book with our fingers. Here fingers work like a pair of tongs. We cut the food with the help of our teeth. Here teeth work like scissors.

Like any other machine, the body also has different parts. Each part of the body which performs a particular function is called an organ.

Fig. 33

Activity 1

Look at the figure. List the organs you find in the head region and write the function of each organ in the column against it.

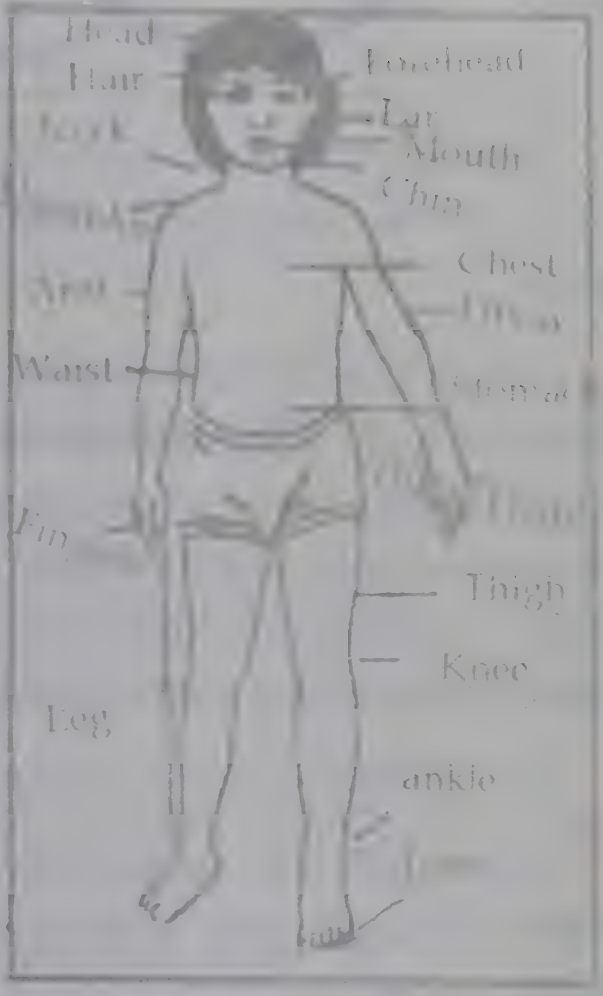
Sl. No.	Name of the organ	Function of the organ

Eyes, ears, nose and tongue are the important organs in the head region. The brain inside is protected by the skull. The head is covered with hair. Not only does it beautify our looks, hair also protects our head.

The part of the body below the head is the trunk. The part which connects the head and the trunk is the neck. It helps in turning our head sidewards, up and down.

The trunk is divided into the chest and abdomen. The upper portion of the trunk is the chest and the lower portion is the abdomen. Chest protects the heart and lungs. Digestive organs are found in the region of the abdomen.

Fig. 34



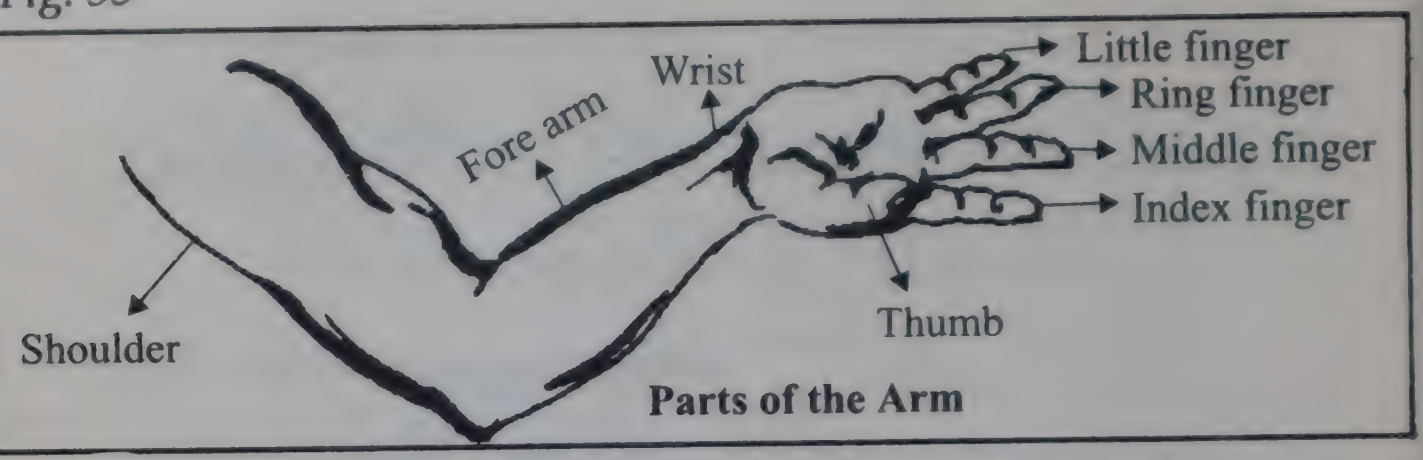
Parts of the body

Activity 2

List out the tasks you do by using your hands and legs

Sl. No.	Task done using hands	Sl. No.	Task done using legs

Fig. 35



Parts of the Arm

Just below the neck on the upper portion of the trunk, you see two shoulders. Attached to the shoulders are the arms.

The arm is divisible into three parts-upper arm, fore arm and the hand. Between the shoulder and the arm there is a joint. It helps to move our arm in a circular fashion. Between the upper arm and the lower arm there is an elbow joint. It helps to move our lower arm. Between the lower arm and hand, there is the wrist. It helps to rotate the hand.

It is on the wrist, we wear a watch.

There are five fingers in each hand. Each finger has a name. Thumb, fore finger, middle finger, ring finger and little finger.

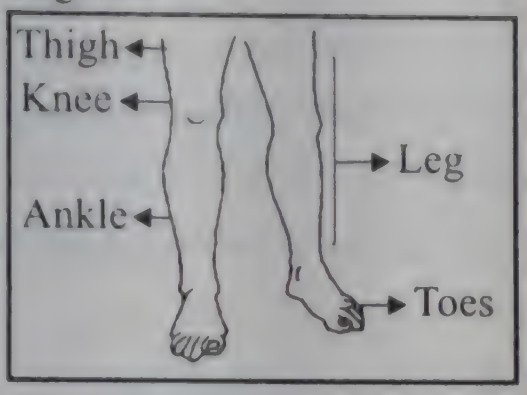
We can do a number of tasks with the help of these fingers like holding, grasping, catching the ball, eating our food, writing etc.

What would have happened if all the fingers were of the same size? We can do various tasks only because our fingers are of unequal lengths. Just think for a moment what would have happened if we had no hands.

Parts of the leg

Like the arm, the leg also consists of many parts. Foot, toes, heels, ankle, knee, thigh and foreleg are the different parts of the leg. Heel is the back portion of the foot, and toes are in front. There are joints even in the leg. These joints help in the movement of the leg while running, walking, sitting etc.

Fig. 36



FOR YOU TO REMEMBER

1. Our body works like a machine.
2. Our body is divisible into head, trunk and limbs.
3. Parts of the arm are-upper arm, lower arm and hand with five fingers.
4. Parts of the leg are-foot, toes, heel, ankle, knee, thigh, foreleg.

FOR YOU TO ANSWER

1. Answer the following
    1. What are the important parts of the body?
    2. What important organs do you find in the head region?
    3. Name the five fingers of the hand.
    4. Name the parts of the arm.
    5. Name the parts of the leg.

2. Fill up the blanks with suitable words.

1. A part of the body which performs a particular function is called _____
2. The part which connects the head and trunk is called _____
3. The joint which connects the forearm and the hand is called _____

3. Follow up activities

1. List out the games which are played using hands.
2. List out the games which are played using legs.
3. List out the tasks you wish to do using hands.

2. OUR SENSE ORGANS

Eyes, ears, tongue, nose and skin are the five sense organs. These sense organs help us to understand the things around us.

Our eyes

Eyes help us to see things. Eyelids protect our eyes. There are eye lashes. Eyelids and eyelashes prevent dust and other foreign particles from entering our eyes.

Fig. 37

Eye

Activity

Go to a room with a candle and a match box. Do not light the candle. Close the windows and doors. Can you see the things in the room? Now light the candle. Can you see the things? What do you conclude from this? We can see the things only when there is light.

Care of the eye

Our eyes are very delicate organs and they need special care.

1. You should always read in sufficiently bright light and not in too bright or too dim light.
2. You should not read in a moving car, bus or train.
3. You should keep your eyes clean.
4. If you have any sight problem, you should immediately consult the eye specialist.
5. You should not rub the eyes, when dust or insects or any other foreign body gets into your eyes.

Colour of the eye

Examine the colour of the eyes of your friends. Is there any difference in the colour?

The eyes may be black, blue, brown or green in colour.

Fig. 38

Our ears

Why do we need two ears? We can know the direction from which

EDU-120
07654 Pov
LIBRARY

the sound is coming without turning our head in that direction.

Our ears are in the shape of a seashell. This is the best shape for picking up sounds. Inside the ear, there is an eardrum. It vibrates when the sound wave strikes it. These vibrations of the eardrum are carried to the brain. The brain gives meaning to it.

Care of the ear

Ear is a delicate organ. It needs special care.

1. The ear should not receive any hard blow. Otherwise the eardrum may rupture and cause deafness.
2. Do not clean the ears with a hairpin or match stick.
3. If any small object or insect happens to get into the ear, you should go to a doctor to get it removed.

Activity 3

Ask your friend to hold a bell and stand at a place, about 300 m away from you. Ask your friend to ring the bell. Can you hear the sound of the bell? Move about 100m towards your friend. What difference do you find? Like this, go slowly towards your friend. As you go nearer and nearer you hear the sound louder and louder and more clearly. The ear helps in identifying different kinds of sounds. The loudness may be grouped as low, medium, high, harsh or mild.

You do not hear any sound if you close your ears.

Just imagine, you had no ears. What would have been your difficulties?

Our nose

The nose is an organ of smell. It can sense different kinds of smell like the smell of flowers, eatables, perfumes, rotten eggs etc.

There are two nostrils. There is mucous and hair in the nostrils. They prevent the dust from entering the lungs.

We breathe through the nose.

Care of nose

1. You should keep your nose clean.
2. You should not put fingers, pencils or match sticks etc., into the nostrils.

Activity 4

Collect flowers and vegetables like onions, garlic etc. Put each of them into a cloth bag separately. Blind fold your friend. Ask him to identify the things.

Activity 5

Collect different varieties of flowers and vegetables from the market. List them out. Some have a strong smell and some mild. Classify them accordingly.

Sl. No.	Strong smell	Sl. No.	Mild smell

Our tongue

The tongue is an organ of taste. It helps in identifying sweet, sour, saline and bitter tastes.

Care of the tongue

1. The tongue must be cleaned every day while brushing the teeth.
2. After meals, keep your mouth and tongue clean.
3. Do not take very hot drinks

Our skin

The skin is the outer most covering of the body. The thickness of the skin is not uniform. It is thick in some places. For example the palm, bottom feet etc. It is thin in some places.

The skin helps us to feel heat, cold, pain, pressure and the sense of touch such as smooth or rough etc.

The skin removes waste substances from our body in the form of sweat.

Care of the skin

1. Take bath everyday to keep your skin clean. This removes sweat, germs and dirt.
2. Keep your skin clean to avoid skin diseases like eczema, itches, ringworms, scabies.

Activity 6

Touch and feel the specimens (stone etc.) and list out your experiences and classify them.

Sl. No.	Soft objects	Sl. No.	Hard objects
1		1	
2		2	
3		3	
4		4	
5		5	

Colour of the skin

Ask your friends to stand in a row. Classify them into three groups according to their skin colour as dark, wheatish and white.

Sl. No.	Colour of the skin	No. of the students
1	Dark	
2	Wheatish	
3	White	

The colour of the skin is due to melanin. Melanin is a colouring substance. Africans are very dark in colour because they have more melanin.

3. OUR TEETH

Look at the figure. The first picture is of a boy with teeth, and the other is the picture of a man without teeth.

Fig. 39

Activity 1

Compare the faces of people, who have teeth and who do not have teeth. Observe how the old men, who do not have teeth, talk.

The teeth gives shape to our face. The face looks shrunken if there are no teeth. Teeth help us to speak clearly.

We enjoy tearing the sugarcane and sucking its juice. It is sweet and juicy. How wholesome are the red apples! They taste so rich and sweet! We can enjoy these gifts of nature only if our teeth are healthy and strong.

Activity 2

Stand before a mirror. Open your mouth, examine carefully the teeth on your upper and lower jaw. Are all the teeth alike in size and shape?

Fig. 40

There are three types of teeth.

1. Incisors (cutting teeth)

There are eight incisors. Four in each jaw. They are sharp edged front teeth. They are used for cutting the food.

2. Canines (tearing teeth)

They are found on either side of the incisors. Canines are four in number, two in each jaw. They are pointed and are used for tearing the food.

3. Molars (grinding teeth)

They are situated just behind the canines. They look like double teeth. They are flat and strong. They help in grinding the food. An adult has 20 molars.

Activity 3

Which type of teeth are used in eating the following items? Put a tick (✓) mark in the respective column.

Sl. No.	Food item	Type of teeth			None of these teeth
		Incisors	Canines	Molars	
1	Chapathi				
2	Sugarcane				
3	Rice				
4	Milk				
5	Drumstick				
6	Idli				
7	Vade				
8	Apple				
9	Meat				

Activity 4

Do you find teeth in a new born baby? Does a three month old baby have any teeth? Observe.

The new born baby has no teeth. Teeth begin to grow only after a few months. When the child is six months old, the first tooth starts coming out. By the time the child is 2 1/2 years old, the child will have 20 teeth. These are called milk teeth.

As the child grows, the milk teeth fall down one by one, and new permanent teeth grow in their place.

At the age of 12 - 14 years, the child will have 28 teeth. 14 teeth in the lower jaw and 14 teeth in the upper jaw. After about five or six years, four more teeth (molar teeth) develop. These are called **wisdom** teeth.

Thus a grown up adult has 32 teeth. Some may have 30 teeth.

Two sets of teeth develop in the life time of man. They are MILK TEETH and PERMANENT TEETH.

Keep your teeth clean

Our teeth cut the food, tear the food and grind the food. While doing so, some food particles remain in the corners of the teeth. If these food particles are not removed, they rot and cause tooth decay. This harms the gums also.

We must brush our teeth after every meal. Brushing removes the food particlés sticking to the teeth.

Bad teeth cause diseases. If we do not clean our teeth properly, they begin to decay. Decay of teeth causes tooth ache and unbearable pain. It also causes cavities.

Bad teeth cause bad breath. Blood and pus ooze out from the gums.

Bad teeth and gums poison the chewed food. This causes indigestion and stomach problems.

We can prevent tooth decay. We should brush our teeth twice a day, once on getting up in morning and before going to bed at night. We must rinse our mouth with water, everytime we eat.

We should use good tooth paste or tooth powder and a good tooth brush to clean our teeth.

In villages, people use neem sticks for brushing the teeth. Bristles are made at the end of the neem sticks. They serve the purpose of tooth brushes. Charcoal powder mixed with salt and alum is used as tooth powder. Salt is a good germicide. The tooth brush and the neem stick should be used carefully, so that they do not harm the gums.

Use the brush vertically to clean your teeth. Brush backward and forward across the top of teeth. So that the dirt and sticking food particles come out. Brush the inner and outer parts of the teeth. We should massage the gums also.

Toffees, chocolates, sweets should not be given to children especially just before they go to bed. Eat sweets along with the meals. Do not eat sweets in between meals. For building healthy teeth, we should eat leafy vegetables, fresh fruits, fish, meat and eggs.

We can also use fingers to clean our teeth and gums. Fingers can reach all the corners of the mouth. So fingers are

also of great help. To make the gums strong, massage them with your fingers, while washing the mouth.

Everyday we should chew some hard food, like raw carrot, sweet potato, radish, cucumber, sugarcane, apple and coconut. By doing so the gums get good exercise.

Proper exercises keep the gums and teeth healthy and strong.

FOR YOU TO REMEMBER

1. Two sets of teeth develop in one's life time.
   (a) Milk teeth and (b) Permanent teeth.
2. There are three types of teeth.
   Incisors - for cutting the food.
   Canines - for tearing the food.
   Molars - for grinding the food.
3. Brush the teeth before you go to bed in the night and after you get up in the morning.

4. OUR FOOD

What did you eat at home before you came to school? Some of you must have eaten chapathis or rotis and curry. Others must have eaten rice, vegetable soup and still others must have eaten bread with milk or some other food.

Chapathis are prepared out of wheat flour. Roti is prepared out of Jowar flour or rice flour. Cooked rice is prepared out of rice. Curry is prepared out of vegetables etc.

Common food items that we eat every day are prepared out of one or more of the following.

1. Rice
2. Ragi
3. Jowar
4. Bajra
5. Pulses
6. Eggs
7. Fish
8. Meat
9. Vegetable oil
10. Ghee
11. Groundnut
12. Vegetables
13. Leafy vegetables
14. Curds
15. Fruits

The nutrients found in the food are

1. Carbohydrates
2. Proteins
3. Fat
4. Water
5. Minerals
6. Vitamins.

Why do we need food? Why should we include different types of food substances in our diet?

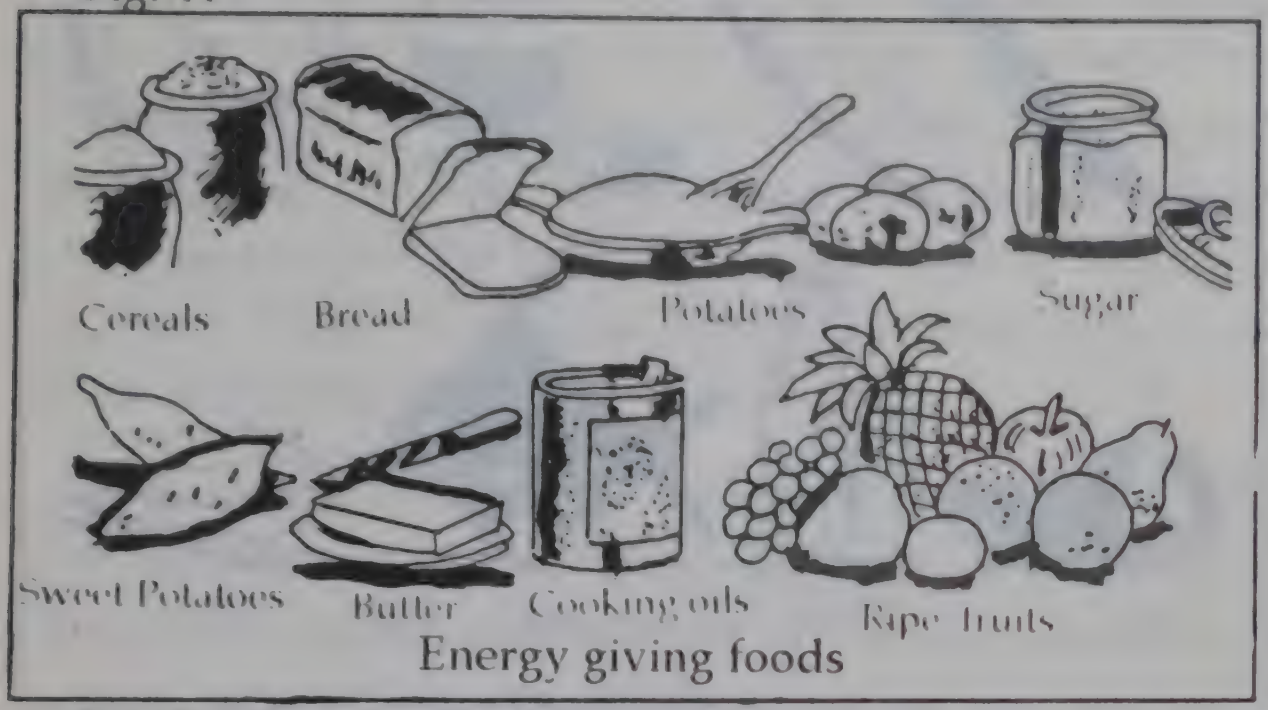
Just as a motor car needs petrol or diesel, our body needs food to get energy. We need food to move around. We need food to keep our body warm enough, to build our body and to keep ourselves healthy and strong. Food is needed to repair the lost parts.

Types of food substances

Food substances can be broadly grouped into three types. These different types of food help us in different ways.

1. Energy Producing Food

Fig. 41



Energy giving foods

Food substances like cereals, potato, sweet potato, sugar, jaggery, butter, fruits, vegetable oils etc., provide energy.

Wheat, ragi, rice, jowar, bajra are called cereals. These form a major part of our daily food. These provide energy required for work and play.

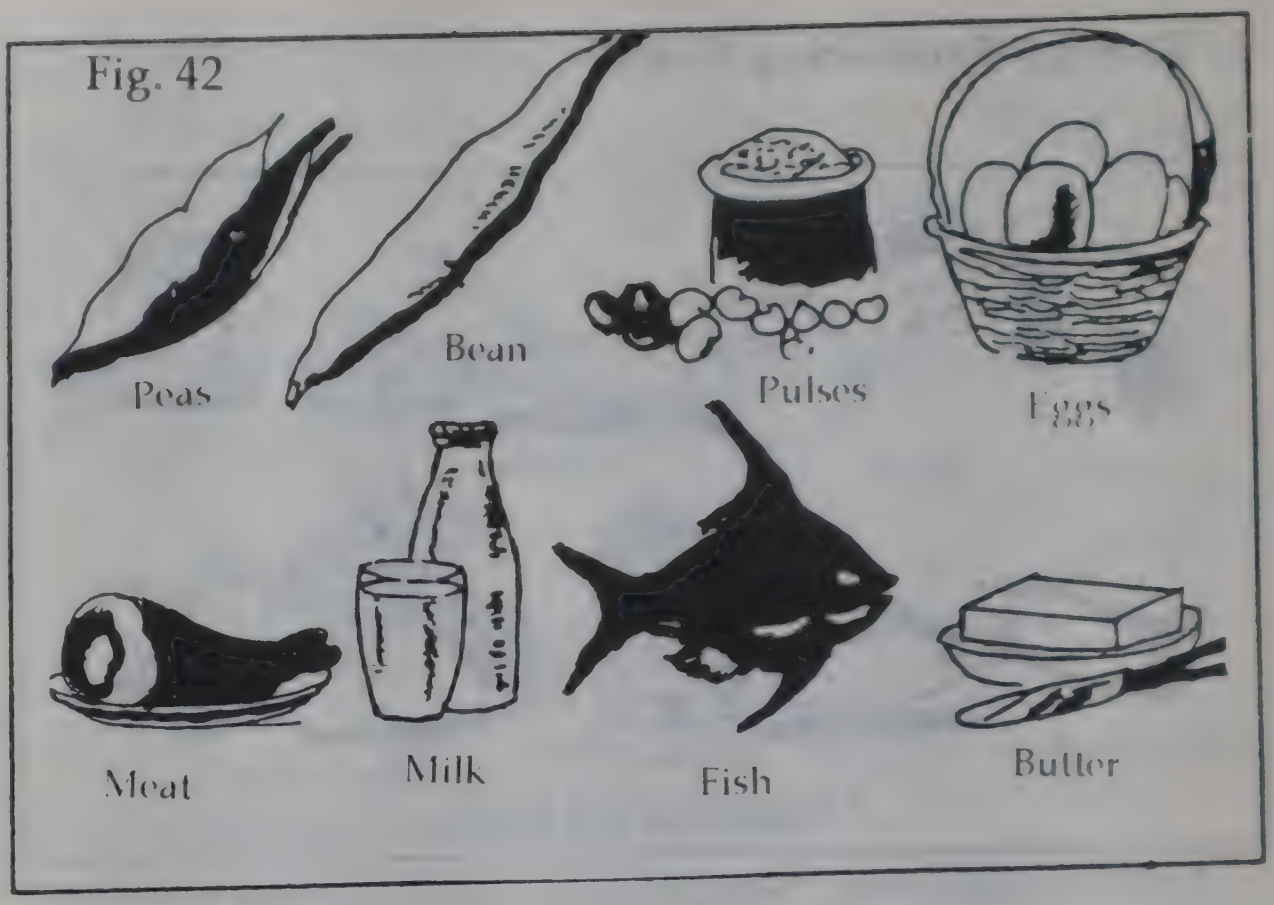
2. Growth and Body Building food

Some substances help in the growth of the body and repair of worn out parts of the body.

Food substances like pulses, eggs, butter, meat, fish, milk etc., help in growth of the body.

Red gram, bengal gram, green gram, black gram are called pulses.

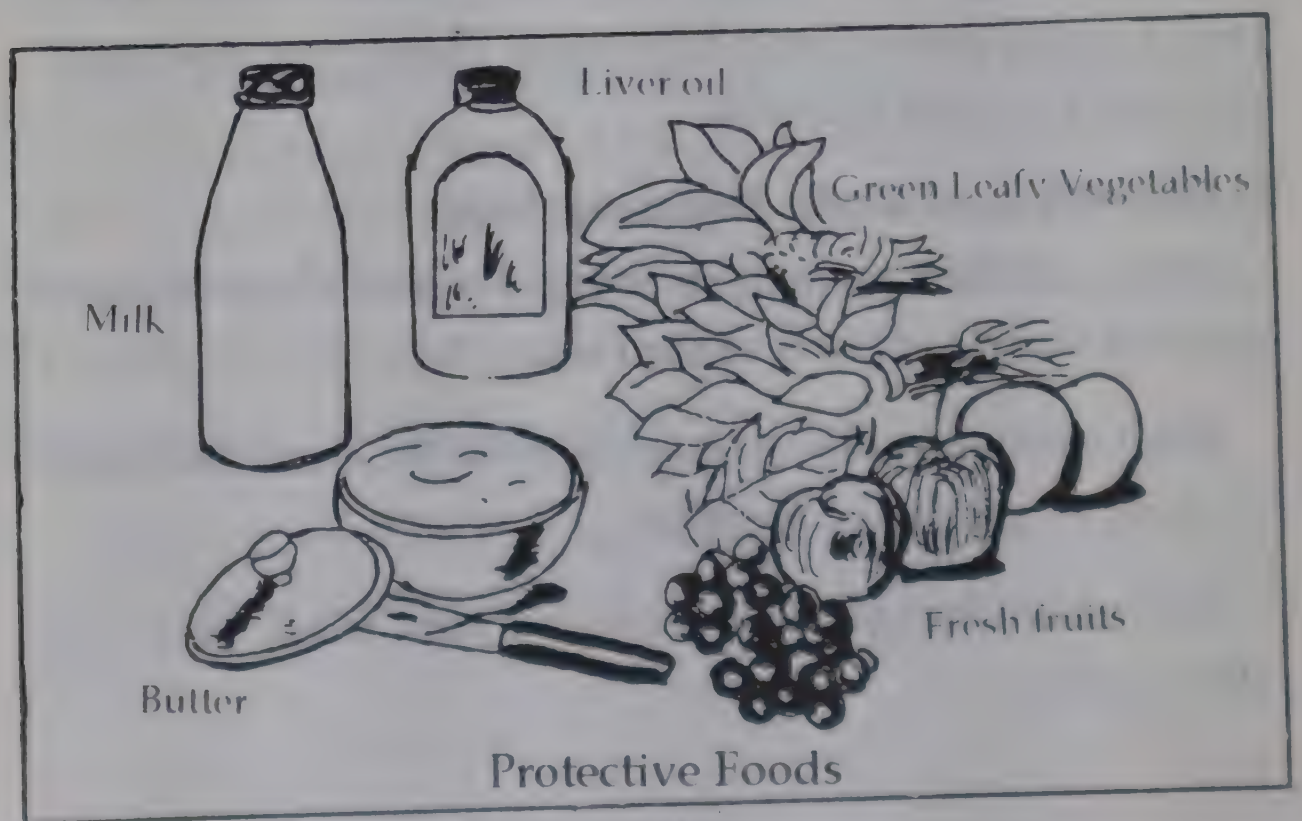
Fig. 42



Body building foods that help us to grow.

3. Protective food

Fig. 43



Protective Foods

Some food substances give protection against diseases. Certain food substances like leafy vegetables, milk, butter, fruits, liver oil etc., are rich in vitamins and minerals. They protect us from harmful diseases. They make our teeth and bones strong. They also help us to keep our skin healthy and glowing. They help us to have good eye sight. So we should eat more of leafy vegetables, papaya, gooseberry and such other vegetables and fruits.

It is very necessary that we include at least one food substance from each type in our daily food in order to get energy, for growth and building up of our body, and to protect ourselves against diseases.

Activity

List out the food items prepared at home and the food substances used to prepare them. Classify them accordingly in the table given here, under respective groups.

Energy giving food	Body building food	Protective food

Milk - a complete food

Milk is a complete food. It contains sugar, proteins, minerals, fat, vitamins. As milk contains all the food constituents, it is called a complete food. Milk forms the best food for children and sick people.

Water and roughage ought to be a part of our food.

Water forms an important part of our food. Water is needed for digestion of food. It is also needed to throw away waste substances from the body.

We lose water in the form of sweat and urine. So we should drink more water.

All food substances have water in them. But certain food substances contain more water. For example, water-melon, cucumber, bottle-gourd etc.

Vegetables have fibrous parts in them. For example, leafy vegetables, beans, ridge gourd, central part of stem of the banana plant etc. We should eat fibrous parts. It helps in bowel movement.

Cooked food

We cook our food and eat. Why? Cooking makes our food soft and tasty. Cooked food is easily digestable.

Certain food substances might have harmful germs in them. These harmful germs are killed while cooking.

Various methods are adopted to make our food soft, tasty and easily digestable. For example, pulses, rice, potato are cooked. Bread, chapathis, rotis are baked. Idlis are cooked in steam. Puris are fried in oil and so on.

Fish and meat should be eaten only after cooking them properly.

Vegetables should not be over cooked. Otherwise vitamins in them will be lost by overcooking.

Food substances that can be eaten raw

Certain vegetables can be eaten raw and uncooked. Can you name them?

Carrot, onion, radish, cucumber, tomatoes etc., can be eaten raw and uncooked. They taste better when eaten raw.

Fruits are also eaten raw, but sometimes they are cooked before eating.

Green vegetables are rich in vitamins. We get more vitamins, when these vegetables are eaten raw. Raw carrots and cucumbers are tasty to eat.

Pulses like green gram, bengal gram, peas are eaten after sprouting them. Sprouted pulses are delicious to eat. These are also very rich in vitamins.

There are certain food substances which can be eaten without cooking them or after cooking them. Do you know what they are?

Carrot, radish, cucumber, tomato, sweet potato, beans, onion, banana, sprouted pulses etc., belong to this group of food substances which can be eaten without cooking them or after cooking them.

Activity

A list of vegetables is given below. Classify them accordingly in the table given below.

Cucumber, Lady's finger, potato, chillies, carrot, beet root, cabbage, brinjal, peas, leafy vegetables, drum sticks.

Sl. No.	Name of the vegetables	Vegetables eaten raw	Vegetables eaten after cooking

Vegetables and fruits should be washed and cleaned before using them

When it is plucked, it contains dust and germs. Now a days , insecticides are sprayed on plants. So it must be washed well before use.

Dirt and dust collect on the fruits and vegetables when they are kept open. Flies also sit on them. Fruits and vegetables should be cleaned by washing them in clean water.

Cut fruits should not be left open for long, otherwise they lose their water content and become dry. Vitamins in them are also lost.

Uncovered food substances kept open in air should never be eaten

Certain food stuffs and cut fruits are sold on the road side. Dust and germs collect on them. Flies spoil them. Flies carry harmful germs and deposit them on the food stuffs and cut fruits.

When we eat such food stuffs, we suffer from cholera, jaundice, dysentery, diarrhoea and such other diseases.

FOR YOU TO REMEMBER

1. Balanced diet includes energy giving food, body building food and protective food, in required quantity.
2. Milk is a complete food.
3. Roughage helps in bowel movement.

4. Vegetables and fruits should be washed properly before eating them.
5. It is good for health to eat certain vegetables raw.
6. Food substances become soft and easily digestable in cooking.
7. Food stuffs kept open in air should not be eaten.

FOR YOU TO ANSWER

1. Name any three food substances which help in body building.
2. Name any three food substances which provide energy for our body.
3. Name any three food substances which protect the body against diseases.
4. Why should the food be cooked?
5. Name any three vegetables that can be eaten raw.
6. Which are the food substances that have fibrous parts in them?
7. Name the fruits and vegetables which have more water in them.

2. Fill in the blanks with appropriate words

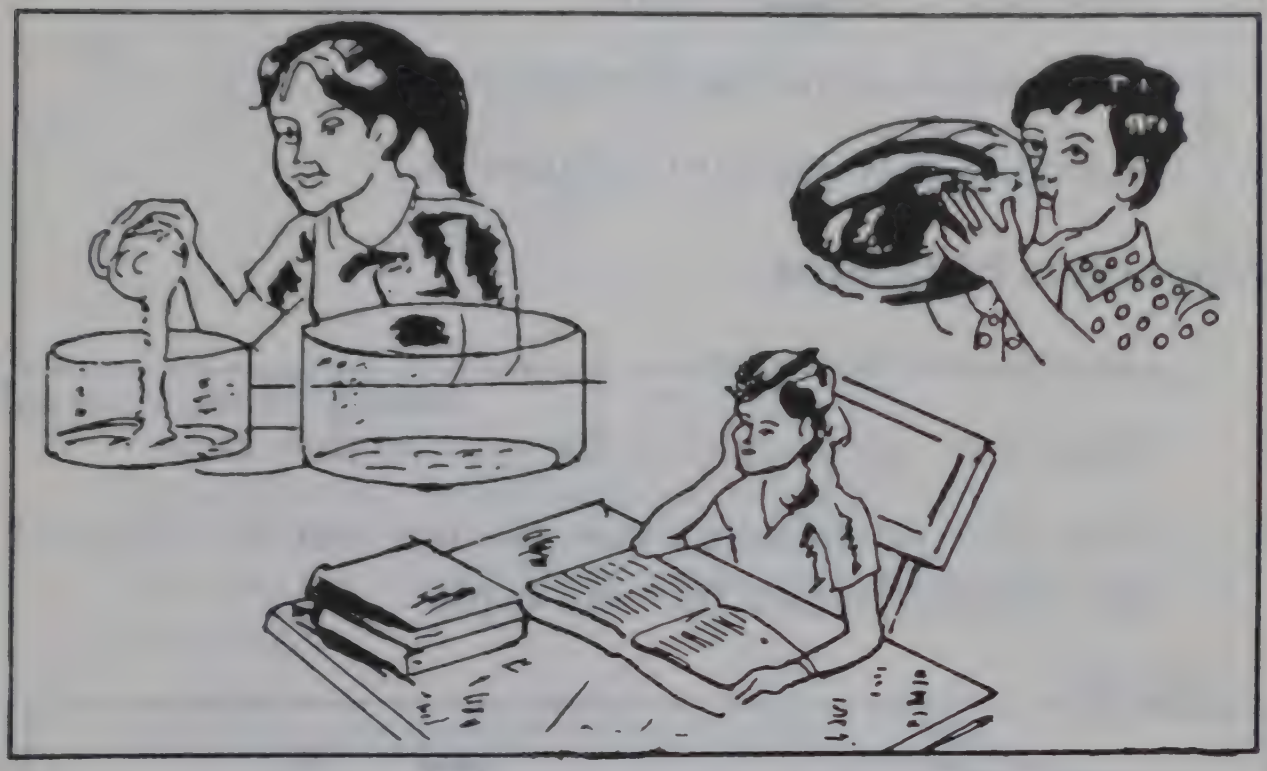
1. Vitamins protect our body from _____
2. _____ is a complete food.
3. Cereals provide _____ to our body.
4. When vegetables are over cooked _____ are destroyed.

CHAPTER 3

1. THREE STATES OF MATTER

Observe the picture below.

Fig 44



A girl is pouring water. In the same way can you pour the book on the table? Things that can be poured from one vessel to another are called **liquids**. Things like books are called **solids**. Things like air which is filled in the balloon are called **gases.**

Things you play with, like marbles, tops and the rubber, you use to erase, stone, table, chair etc. are **solids**. Tea, fruit juice and milk etc. are **liquids**. The air around us is **gas**.

Matter exists in three states. Solid, liquid and gas. Solids, liquids and gases have different properties.

EDU-120
07684 P

Activity

Take a stone in your hand. Press it from all the sides. See whether it has changed its shape and size.

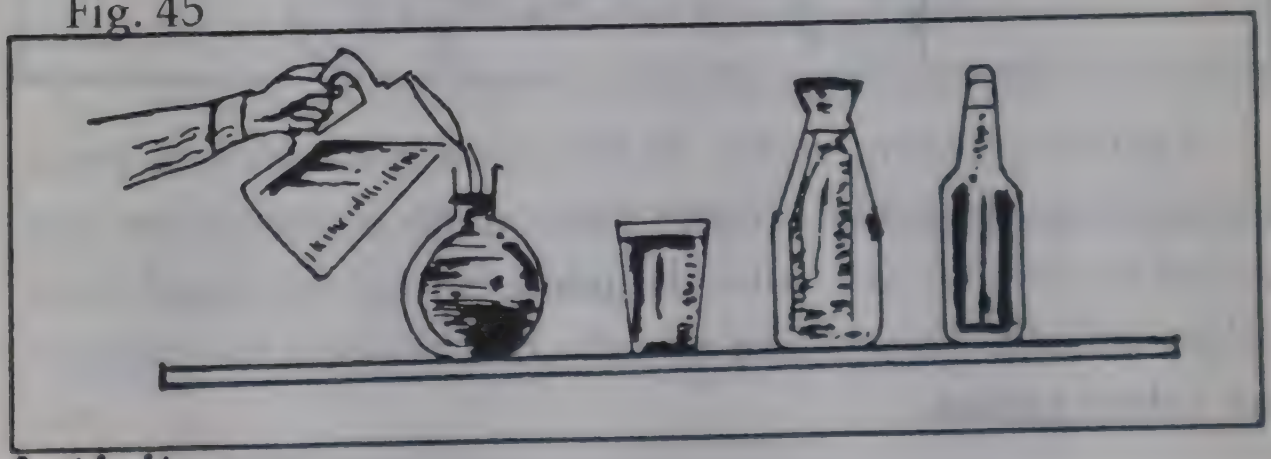
Properties of solids

1. They have a definite shape.
2. Their shape cannot be changed easily.
3. Normally they are hard substances.

Properties of liquids

1. Liquids can be poured.
2. When they are poured on the ground they flow.
3. They have no definite shape. So they take the shape of the vessels in which they are kept.

Fig. 45

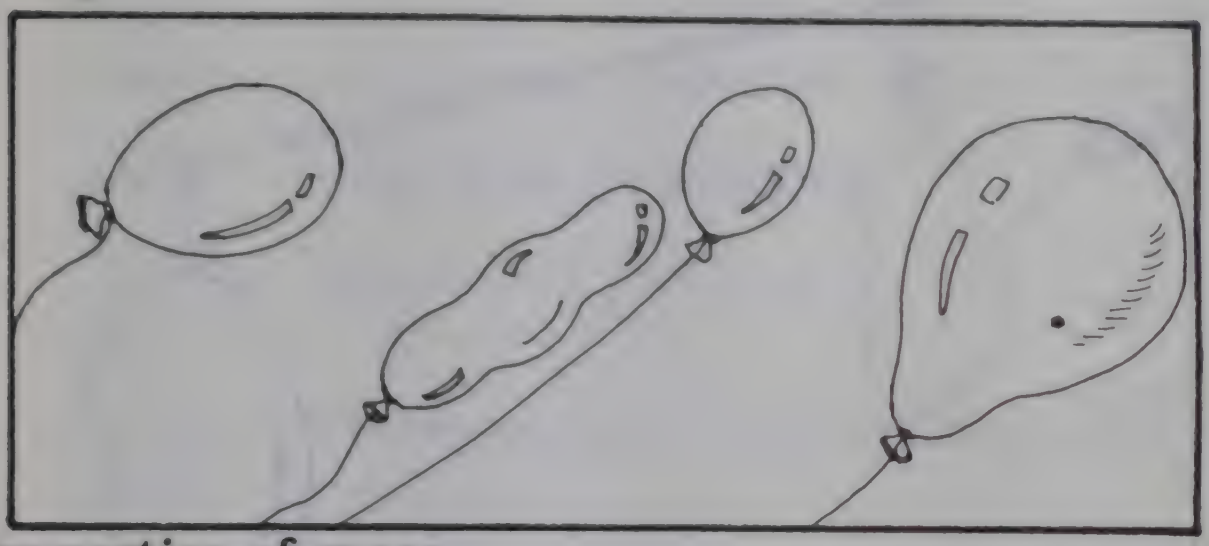


Activity

Take five containers of different shapes made of glass as shown in the picture above. Fill each one with a tumbler of coloured water. Observe the shape of water. Do you find a definite shape. In the same way fill the vessels with the milk, sugarcane juice and oil etc. that we use and observe.

Think whether gases also have a definite shape? Find an answer by observing the picture below.

Fig. 46



Properties of gases

1. Gases have no definite shape of their own.
2. They get the shape of the vessel in which they are collected.
3. They flow more easily than liquids.

Solids, liquids and gases have some properties which are similar. Such properties are called **Common properties.**

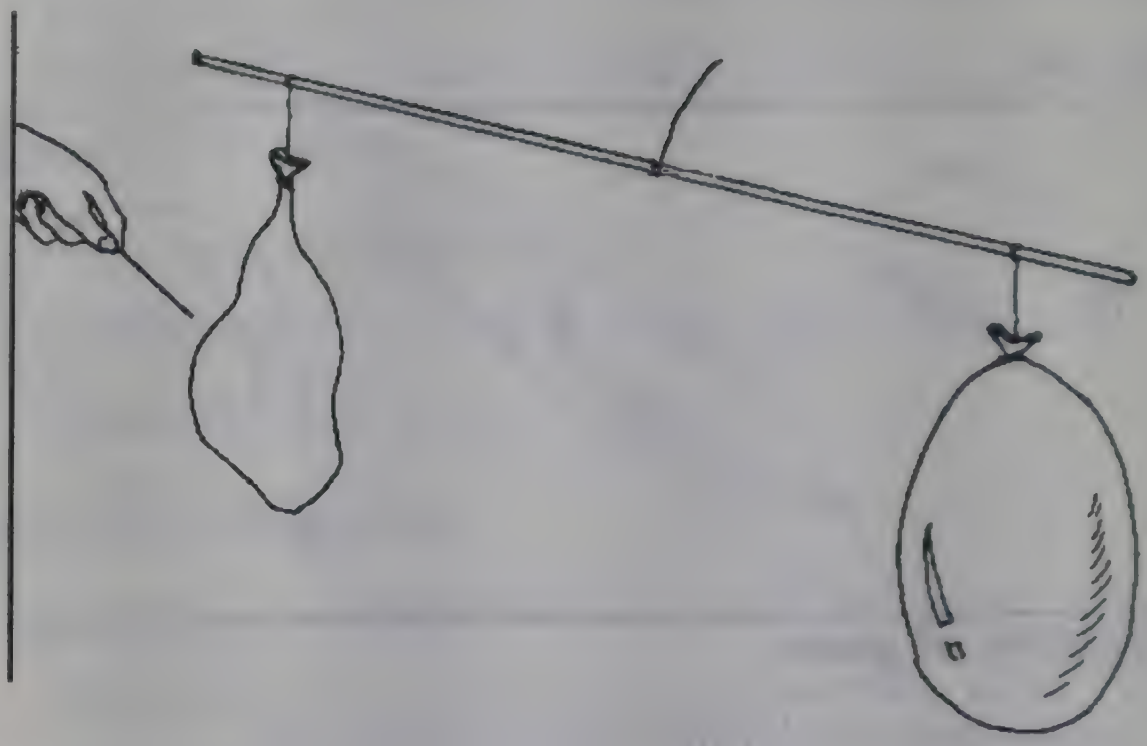
Activity 1

Lift an empty bag. Fill some quantity of rice in it. Now lift the bag. Can you say what difference you notice?

Activity 2

Lift an empty bucket. Fill it with some water. Now lift the bucket. Do you find any difference?

Fig. 47



Experiment 3

Tie two balloons of the same size filled with air to the ends of a stick. Let the balloons be at the same level. Prick one of them with a needle. This balloon rises. Can you say why?

Experiment 4

Keep a book on a table. Can you keep another book in the same place when the book is still on the table? Why is it not possible?

From the above experiment we learn that

1. Solids, liquids and gases have weight.
2. Two things cannot occupy the same place at the same time.

FOR YOU TO REMEMBER

1. Matter exists in three forms solids, liquids and gases.
2. Solids, liquids and gases have different properties. They also have some common properties.

FOR YOU TO ANSWER

1. Write the three states of matter (a) _____ (b) _____ c) _____
2. Classify the following matter as solids, liquids and gases.

   (sugar candy, water, ice, steam, kerosene oil, stone, air, honey, oxygen, milk)

Solids	Liquids	Gases

3. Fill in the blanks with correct words.

1. Solids have definite _____.
2. _____ and _____ have no definite shapes.
3. _____ can be poured.

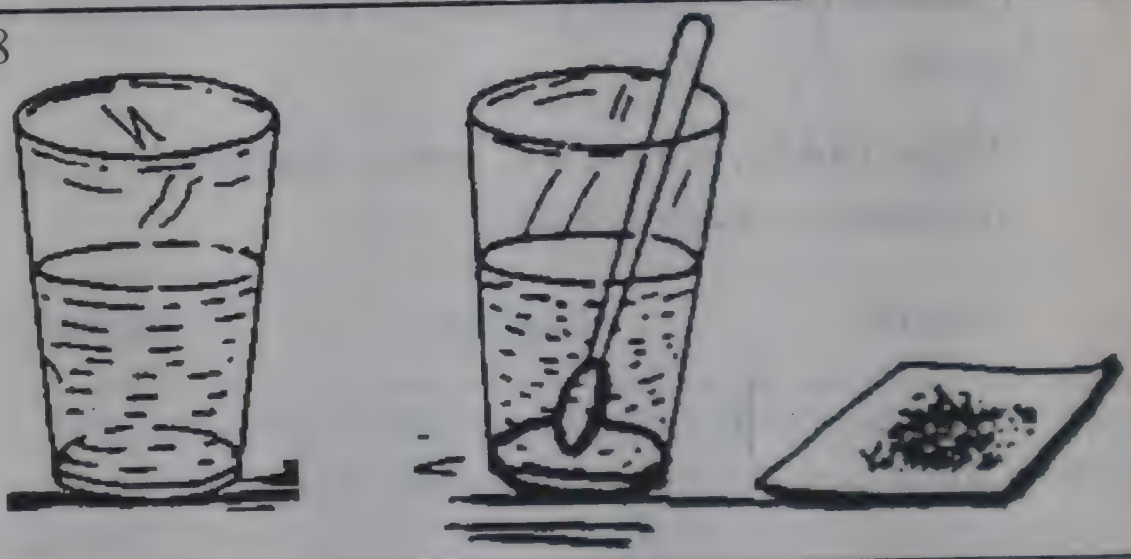
4. Gases do not have definite _____ _____ and _____ _____

5. _____ and _____ get the shape of the vessel in which they are kept.

2. WATER DISSOLVES MANY SUBSTANCES

Some substances like salt and sugar dissolve in water. Substances like stone, sand, wax and oil do not dissolve in water.

Fig. 48



Activity

Take some water in a tumbler. Add one spoon of sugar. Stir the sugar well. See what happens to the sugar. Taste this water. In the same way take water in 3-4 tumblers. Add one spoonful of sand, chalk powder, salt in different tumblers, stir well. See what happens.

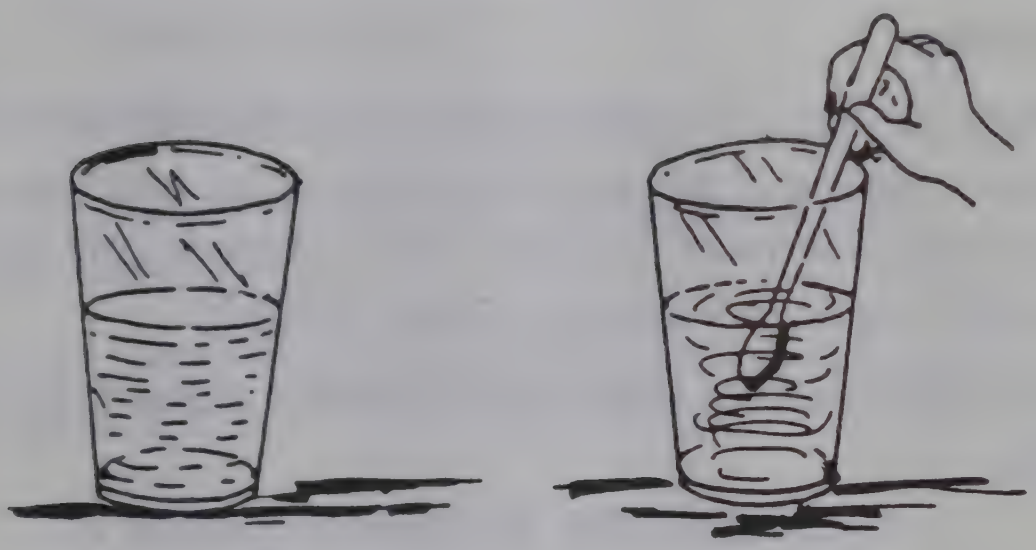
Sugar dissolves in water. That is why the water tastes sweet. Some of you might have tasted sea water or well water. Do you know its taste? Both sea water and from some well water are salty, because some salts are dissolved in them.

Activity

Take two glass tumblers and pour a cup of water in each. Add two spoons of sugar in each. Stir the sugar well in one and leave the other as it is. Now taste the water in both the tumblers. What difference do you find?

Stiring helps a substances dissolve more quickly in water.

Fig. 49



Activity

Experiment

Take two pieces of sugar candy. Powder one of them. Take two glass tumblers. Pour one cup of water in each. Add sugar candy in one and powdered sugar in the other. Stir the water in both the tumblers. See in which one sugar dissolves more quickly.

Powdering of solids help them to dissolve more quickly in water.

Activity

Take a glass tumbler and add a cup of water. Add three spoons of powdered salt. Stir well. See what happens to the salt.

Some salt remains undissolved. Add some more water and stir. See what happens to the salt?

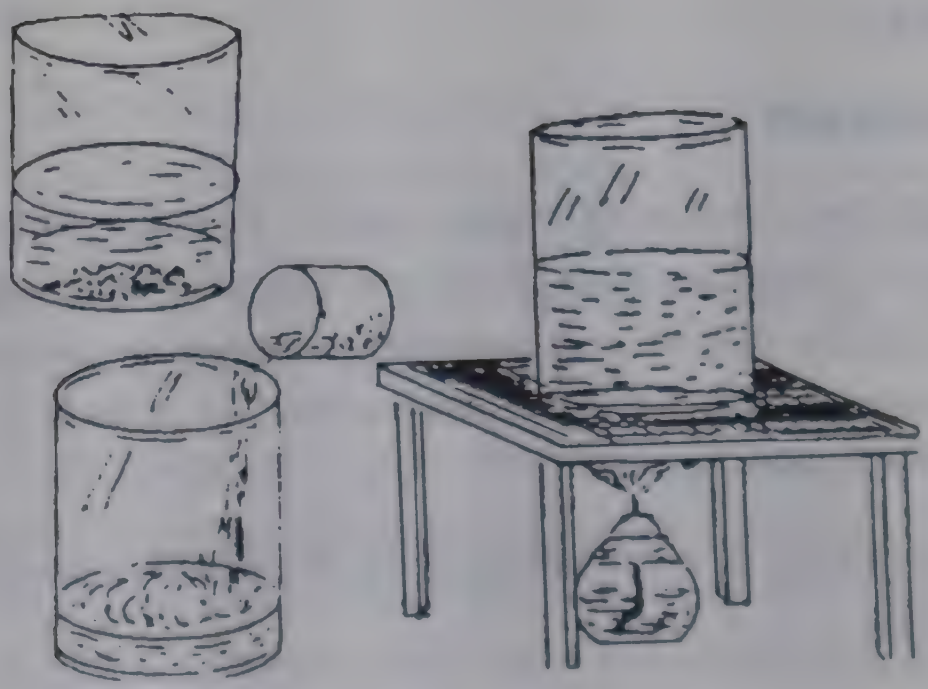
When more liquid is added the undissolved solid dissolves.

Activity

Take two glass tumblers of the same size. Fill half of one with hot water and the other with cold water. Add two spoons full of powdered salt to each of the tumblers. Stir well. See in which water, salt dissolves more quickly.

A solid dissolves more quickly in hot water than in cold water.

Fig. 50



FOR YOU TO ANSWER

1. Make a list of substances that are soluble and insoluble in water.
2. Mark True (T) or False (F).
   a. All the substances dissolve in water ( )
   b. Hot water dissolves more substances than cold water ( )
   c. Stirring makes substances dissolve quickly ( )
   d. Oil dissolves in water ( )
   e. Paints dissolve in kerosene ( )
   f. Tar or Paint on cloth can be removed using Kerosene ( )
   g. Sugar dissolves more quickly in cold milk than in hot milk. ( )

3. SEPARATION OF MIXTURES

There are chances of things getting mixed up in our daily life. Some times when you bring packets from shops they are likely to break and get mixed up. If two or more substances mix, we call it a mixture.

We take mixtures in our food like milk and sugar, dry coconut with sugar, salt and chilli powder, salads etc.

Activity

If you are given a mixture of salt and sand how do you separate them? Can you think?

Experiment

Take a glass beaker. Pour the given mixture in it. Add water. Stir the mixture well. Do not disturb. Observe what happens? Answer the questions given below by thinking carefully.

Questions	Answers
1. Which substance dissolves in water?	1. _____
2. Which substance does not dissolve?	2. _____
3. Why does the sand settle at the bottom of the beaker?	3. _____
4. How do you seperate sand?	4. _____

CHAPTER 4

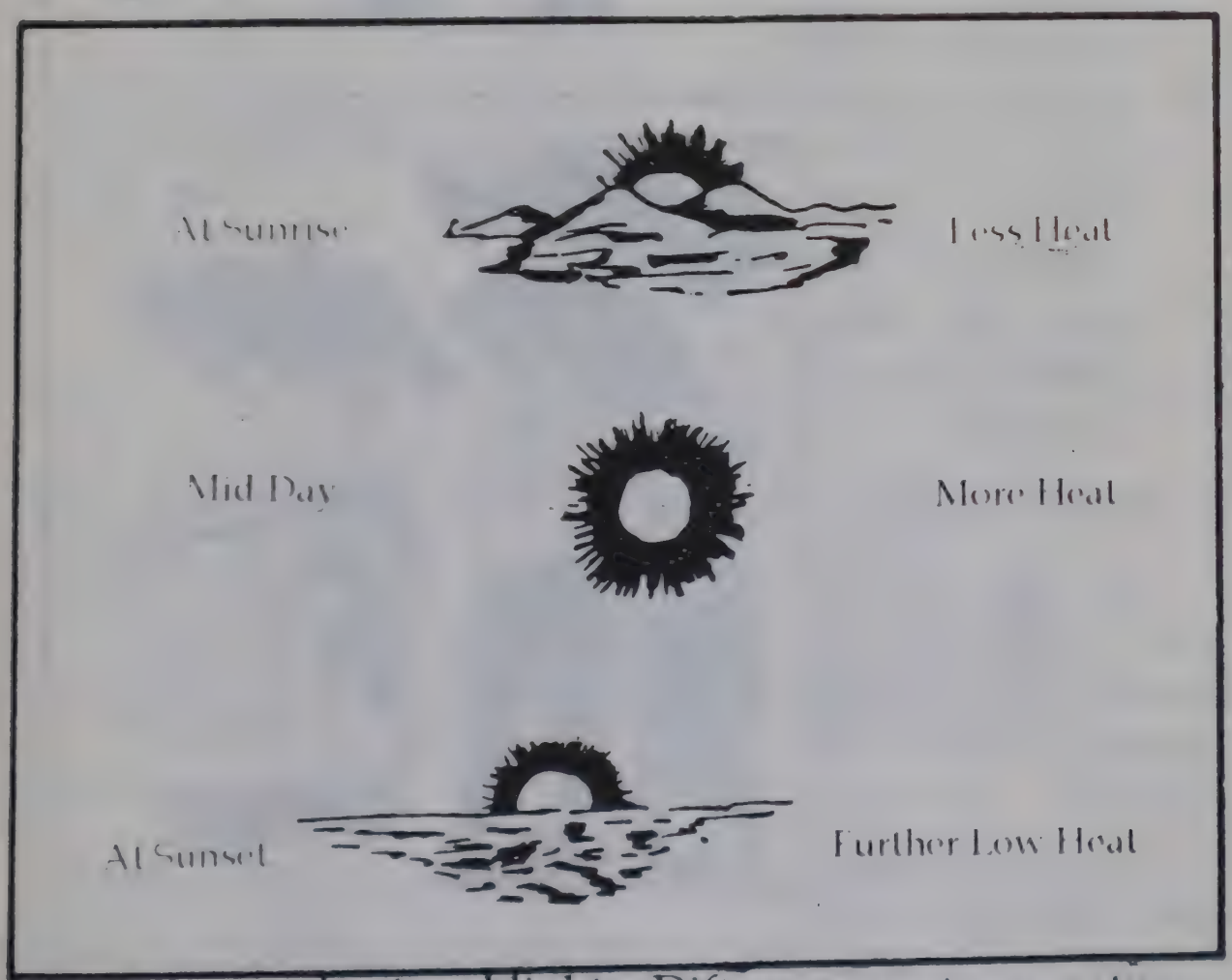
WEATHEF AND SEASONS

1. DIFFERENT TYPES OF WEATHER

Different types of Weather:

Every day we see Sun is rising in the morning. Heat will be less at that time, because the sun rays are slanting. It increases gradually. At noon it is the hotest. Afterwards it goes on decreasing. Finally it becomes cool in the night. Thus we see many changes at different time in the same day.

Fig. 51



Sun gives us heat and light. Difference in temperature causes different types of weather.

TYPES OF WEATHER

1. Sunny days

Fig. 52

Look at the figure. When the sun is bright, we sweat and feel tired. Sunny days are warmer than cloudy days.

Activity 1

1. Walk barefoot at mid-day on a sunny day. Your feet burn, why?
2. Keep a metal vessel in the hot sun and then touch it. How do you feel?

Fig. 53

2. Rainy days

See the picture, what do you observe? It is raining. It is difficult to walk. We can understand that the rain has changed the weather. Does it rain throughout the year? We use umbrella or rain coat to protect ourselves from rain.

3. Stormy days

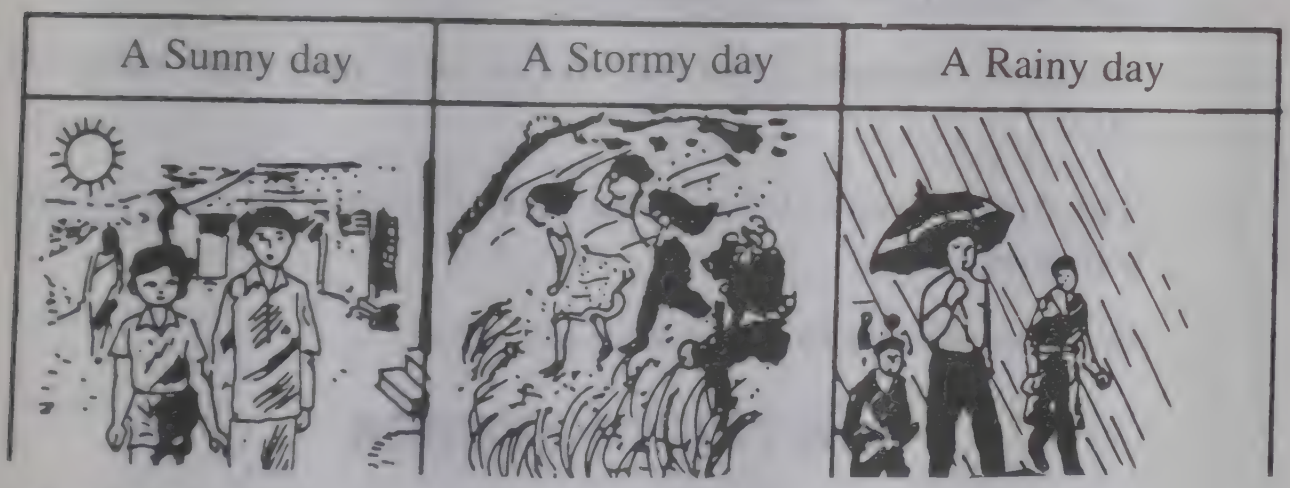
Fig. 54

Observe the figure. It is a stormy day. Wind blows with high speed. It is difficult for us also to move. Trees may fall. Light materials may be blown away.

In dry weather the sky is blue, clouds are scattered. There will be dust and smoke in the atmosphere.

On observing the above factors, we can come to the conclusion that the weather depends on the sun, wind and rain.

Fig. 55



Activity 2

Observe T.V., listen to the radio, read the newspaper, check the weather forecast and compare it with the day's weather.

Night is cooler than day

The sun rays heat the air during the day time. Do you see the sun at night? Since there is no sun at night the atmosphere is cool. There will be different temperatures at different times of the day. This can be recorded by an instruments called thermometer. (You will learn more about thermometers in the next class).

Activity 3

Get a thermometer. Measure the temperature at different times of the day.

In the same way the weather changes during the year also. Summer, Rainy season and Winter .

FOR YOU TO REMEMBER

1. Weather depends upon the following:
   sun, wind, cloud and rainfall.
2. Weather changes from day to day or it may not change at all.
3. The differences in temperature in a day may be recorded by a thermometer.
4. Weather affects our life in many ways.

FOR YOU TO ANSWER

1. What is the type of weather in summer?
2. Write the variations of temperature at different times in a single day?
3. Why is night cooler than day?

4. What are the factors that influence change of weather?
5. How many seasons are there in a year? Name them.

Classify the following statements as true or false:

1. Weather never changes at all.
2. During the summer the weather is hot.
3. It is cool in the night.
4. At the time of a storm there will be dry weather.

DO IT YOURSELF

Observe the weather conditions over a period of one week. Indicate the type of weather by putting "x" mark in the column, below.

Days	Sun	Rain	Wind	Clouds	Darkness	Moonlight
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

2. WATER CYCLE

Evaporation and condensation

You all know how wet clothes are dried. To dry wet clothes they are spread either in the sun or in the wind. Clothes cannot be dried when it is raining. Where has the water in the wet clothes gone when it dries?

Activity 1

Take two saucers of the same shape and size. Take equal quantities of water in each of them. Keep one saucer in sunshine and another in the shade. Observe the change after sometime. In which saucer has the water level decreased? Why?

Fig. 56

Activity 2

Ask a student to dip his hands in water and take it out. Fan the wet hands. What happens to the water particles. Observe.

What do you conclude from the above two experiments. Water becomes vapour due to (1) heat (2) wind.

"The process by which water or liquid become vapour is called **evaporation.**".

What happens to this vapour?

Activity 3

Take some ice pieces in a clean dry glass vessel and cover its mouth with a glass plate. After sometime observe the outer surface of the vessel. Tiny drops of water are formed. Guess the reason?

Activity 4

During winter you observe the drops of water on the leaves and grass during early mornings, even though there is no rain. How are these drops formed?

Water vapour in air is cooled down and collects as tiny drops of water.

"The process by which water vapour changes into water on cooling is called **condensation**".

How does this vapour enter the atmosphere?

Experiment

Boil some water in a kettle. The steam comes out through the nozzle. Hold a vessel containing some ice pieces near the steam. The steam touches the surface of the cold vessel. The tiny drops of water in the steam cool down and come together. These droplets fall down and collect in another vessel.

Inference

Water becomes vapour when heated. On cooling the vapour becomes water.

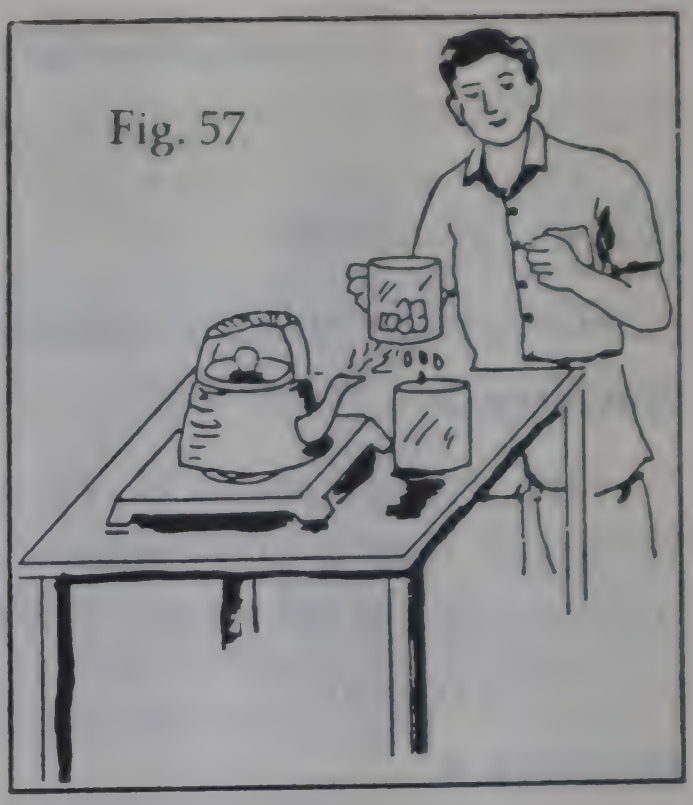


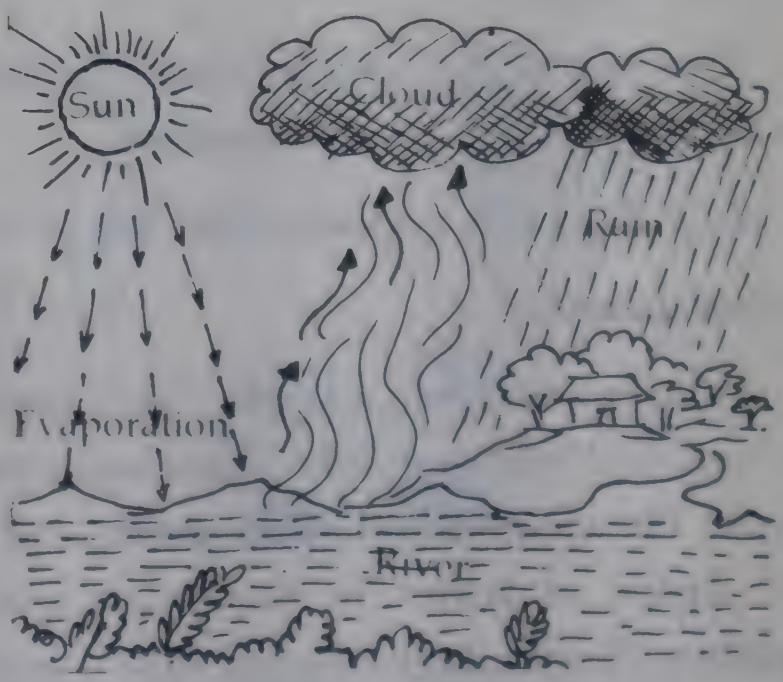
Fig. 57

Self Activity

1. Breathe out air on a clean mirror. Observe what happens?
2. Expose wet clothes to the air or sun. Observe what happens?
3. Wipe the surface of the cement floor with a wet cloth. Switch on the fan. Observe what happens?

Formation of clouds

Fig. 58



"Water becomes water vapour through evaporation. This water vapour condenses to become clouds. The cycle in which water becomes water vapour and water vapour forms clouds and to water in the form of rain is called the water cycle."

CHAPTER 5

THE SKY

We see objects around us clearly during the day because there is light. The sun gives us light. When the sun is in the sky, it is day.

It becomes day as the sun rises. When the sun sets, it becomes night. The sun rises in the east and sets in the west.

Activity

Stand in front of your house and watch the sun rising in the east and setting in the west. Observe the buildings or objects that are on the north and south of your house.

Do we get only light from the sun?

Activity

Stand on your bare foot on a stone or on a tar road at noon. How do you feel? Your legs feel hot. This does not happen at night. We also get heat from the sun.

It becomes dark when the sun sets. Look at the sky at night. What do you see? Look at the picture.

We see thousands of stars and the moon in a clear sky. We get moonlight from the moon. Moon light is not hot. Some days we can see the moon in day time also. But we cannot see the stars during the day. Why?

Fig: 59

Heavenly bodies

We see the sun, the moon and the stars in the sky. These are called heavenly bodies. Our earth is also a heavenly body. The shape of these heavenly bodies is like that of a football. They are spherical in shape.

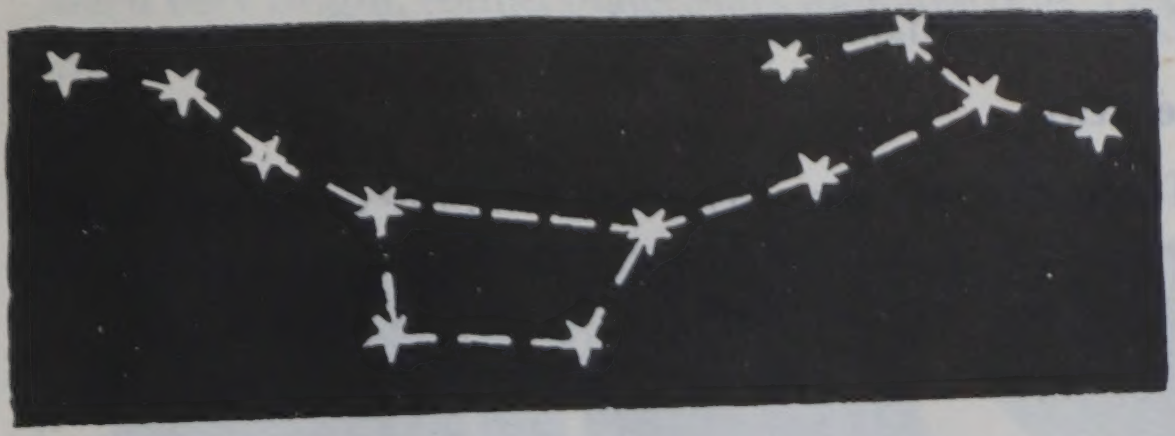
The sun, the moon and the stars are very big. But they look small, because of their great distance from the earth.

Stars

We see thousands of stars in a clear sky. Some look big and others small. Sun is also a Star. Stars are far away from us. So they look small.

Fig. 60

Fig. 61



Activity

Look at the sky at night and observe very bright stars and less bright stars.

Constellations

Some stars are seen in groups. Our ancestors imagined the shapes of animals and human forms in those groups. They have given names to those groups. Such groups of stars are called constellations.

Fig. 62

The constellation you can easily locate is the great bear or 'Saptharshimandala'. It looks like a big kite with a tail.

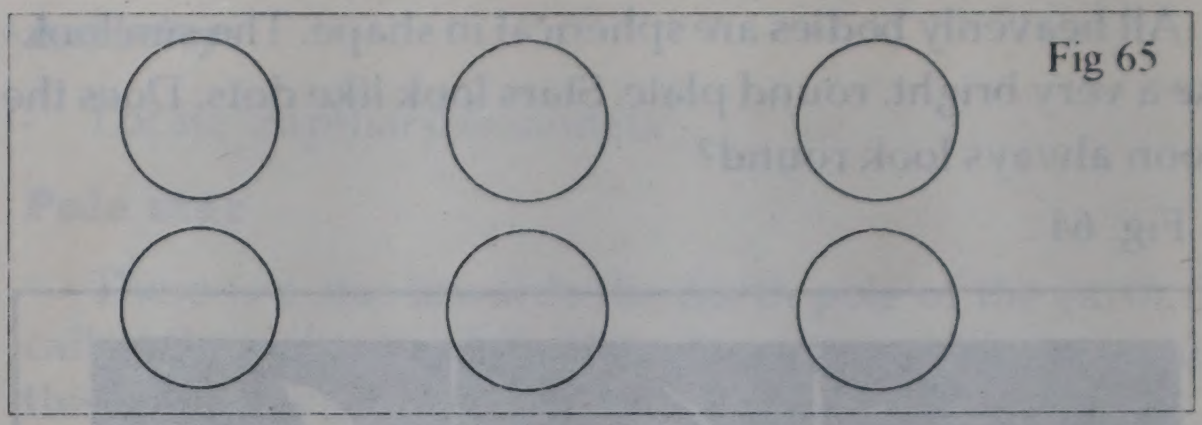


Fig 65

Astronomy

The study of heavenly bodies is called astronomy. From ancient times many Indian astronomers have contributed a lot to this study. Some important Indian astronomers are Aryabhata, Varaha Mihira, Brahma Gupta and Bhaskaracharya.

FOR YOU TO REMEMBER

1. The sun gives us light and heat.
2. We see the moon and stars during nights.
3. The moon, the sun and the stars are very far away from us.
4. The shape of the moon appears to change.
5. Many Indians have contributed a lot to astronomy.

FOR YOU TO ANSWER

1. Answer the following
   1. Why cannot we see the stars during day time?
   2. Why do stars look like dots?
   3. What is the name given to groups of stars?
2. Fill in the blanks
   1. The star that is in line with the earth's axis is _____ .
   2. Sun sets in the _____ .
   3. Varahamihira was a great _____ _____ .
   4. We don't see the moon on a _____ day.

ನ್ಯೂನತೆಯುಳ್ಳ ಮಕ್ಕಳಿಗೆ ಸ್ನೇಹ, ಪ್ರೀತಿ ನೀಡಿದರೆ ಅವರೂ ಎಲ್ಲರಂತೆ ಶಿಕ್ಷಣ ಪಡೆದು ಸ್ವಾವಲಂಬಿಗಳಾಗಬಹುದು.

ನ್ಯೂನತೆ ಎಂದರೆ, ಮಕ್ಕಳಿಗೆ ಬುದ್ಧಿ ಕಡಿಮೆ ಇರಬಹುದು, ಕಣ್ಣು ಕಾಣದೇ ಇರಬಹುದು, ಕಿವಿ ಸರಿಯಾಗಿ ಕೇಳದೇ ಇರಬಹುದು ಅಥವಾ ದೈಹಿಕವಾಗಿ ಅಂಗವಿಕಲತೆ ಇರಬಹುದು. ಈ ಮಕ್ಕಳನ್ನು ಎಳೆಯ ವಯಸ್ಸಿನಲ್ಲಿಯೇ ಗುರುತಿಸಿದರೆ ದ್ವಿತೀಯ ನ್ಯೂನತೆಗಳನ್ನು ತಡೆಯಬಹುದು.

ಶಿಕ್ಷಕರೇ, ನ್ಯೂನತೆಯುಳ್ಳ ಮಕ್ಕಳನ್ನು ನಿಮ್ಮ ತರಗತಿಯಲ್ಲಿ ಗುರುತಿಸಿ, ಆ ಮಕ್ಕಳನ್ನೂ ಬೇರೆ ಮಕ್ಕಳಂತೆಯೇ ಶಿಕ್ಷಣ ನೀಡಬಹುದು ಎಂಬುದನ್ನು ನೆನಪಿಡಿ.

ನ್ಯೂನತೆಯುಳ್ಳ ಮಕ್ಕಳಿಗೆ ಬೇಕಾಗಿರುವುದು ಕರುಣೆಯಲ್ಲ, ಸ್ನೇಹದಿಂದ ತುಂಬಿರುವ ಸಹಾಯ ಹಸ್ತ.

Kokkrebellur (Mandya District)

ದಿ ಬೆಂಗಳೂರು ಪ್ರಿಂಟಿಂಗ್ ಮತ್ತು ಪಬ್ಲಿಷಿಂಗ್ ಕಂಪೆನಿ ಲಿಮಿಟೆಡ್
(ಬೆಂಗಳೂರು ಪ್ರೆಸ್)

ಹೆಡ್ ಆಫೀಸ್ : 88, ಮೈಸೂರು ರಸ್ತೆ, ಬೆಂಗಳೂರು – 560 018
ಫೋನ್ : 6709638 / 6709027
ಬ್ರಾಂಚ್ : ಸ್ಟ್ಯಾಚ್ಯು ಸ್ಕ್ವೇರ್, ಮೈಸೂರು – 570 001
ಫೋನ್ : 420735

Price Rs. 4.40